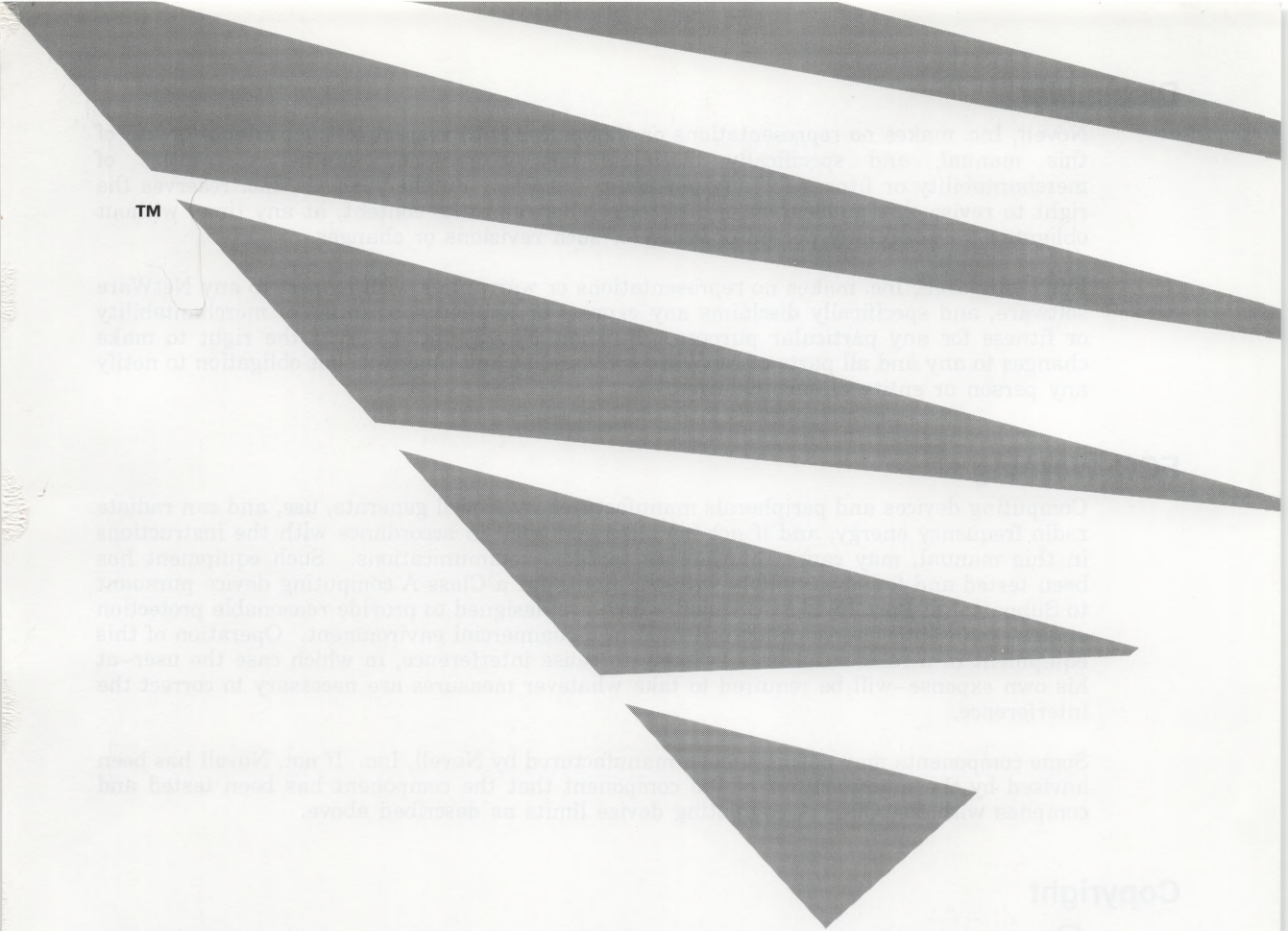
NOVELL®

Print Server

NetWare®



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How to Use This Manual

This manual is written for network supervisors experienced with PC hardware and software. It assumes that you are familiar with NetWare terminology and concepts.

This section of the manual explains page layout and NetWare conventions. We recommend that you read "Concepts" on page 1 for details concerning network printing. If you are ready to begin installation, see "Print Server Installation" on page 15.

The following topics are discussed on the pages indicated:

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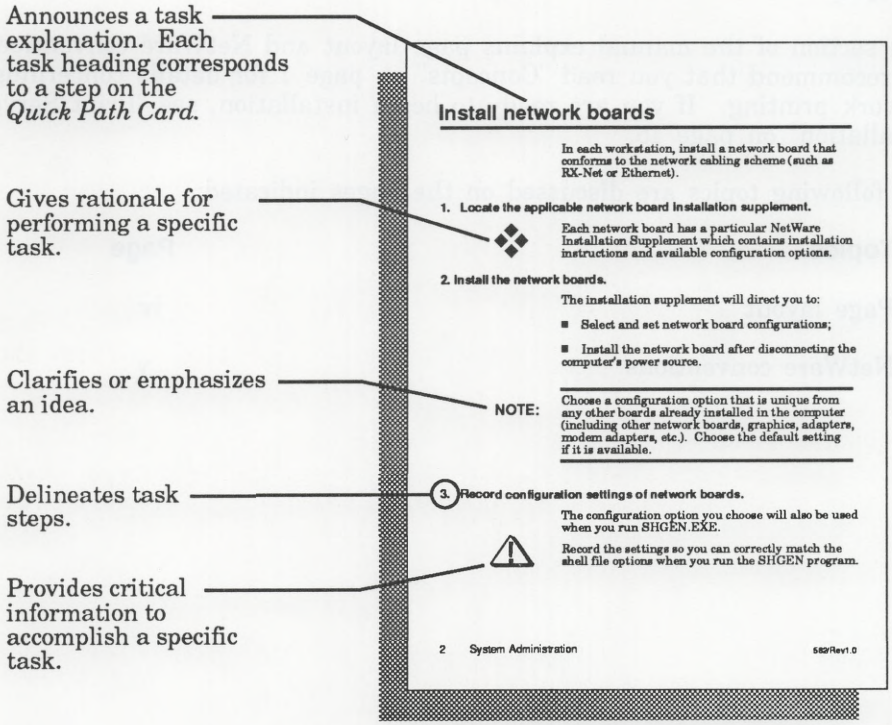
Page layout

Below is a sample of the page layout for the *NetWare Print Server* manual and an explanation of its format.


Announces a task explanation. Each task heading corresponds to a step on the *Quick Path Card.*
Gives rationale for performing a specific task.
Clarifies or emphasizes an idea.
Delineates task steps.
Provides critical information to accomplish a specific task.
Install network boards
In each workstation, install a network board that conforms to the network cabling scheme (such as RX-Net or Ethernet).
1. Locate the applicable network board installation supplement.
Each network board has a particular NetWare Installation Supplement which contains installation instructions and available configuration options.
2. Install the network boards.
The installation supplement will direct you to:
■ Select and set network board configurations;
■ Install the network board after disconnecting the computer's power source.
NOTE:
Choose a configuration option that is unique from any other boards already installed in the computer (including other network boards, graphics, adapters, modem adapters, etc.). Choose the default setting if it is available.
3. Record configuration settings of network boards.
The configuration option you choose will also be used when you run SHGEN.EXE.
Record the settings so you can correctly match the shell file options when you run the SHGEN program.
2 System Administration
562rev1.0

Sample page layout

NetWare conventions

The information below explains the conventions you will find, both in the documentation and in the software, as you perform print server tasks.

Command format

The command format displays the appropriate syntax for entering commands at the DOS and console prompts. The example below shows a command you would enter at the DOS prompt.

NPRINT *path* [*option...*] <Enter>

Conventions

The conventions for this command format are explained below.

NPRINT	Words in capital letters must be typed exactly as shown. They may be typed in either upper- or lower-case.
path	Words that appear in italics are variables. They are replaced with the information pertinent to your task. In this example, you replace *path* with a directory path leading to and including the name of the file you want to print.
[*option...*]	Items included in brackets are optional.
<Enter>	The angle brackets indicate that you should press the key that appears between them. In this example, you should press the Enter key.

Menu programs

Menu programs, which operate with pop-up menus, use certain keys to perform special functions and have some standard components. The keys, components, and terms for menu programs are described below.

Keys

The following keys can be used.

<F1> The F1 or Help key can be used from anywhere within the menu to access help.

- If you press the Help key once, a help screen that applies to the task you are currently working on appears.
- If you press the Help key twice, a help screen gives an overview of the menu program or function key assignments.

<F5> The F5 or Mark key can be used with lists that allow you to add or delete items.

<Escape> The Escape key has three functions.

- If you are on a menu screen other than the main one, pressing <Escape> returns you to a previous menu.
- If you are at the main menu, pressing <Escape> causes an exit confirmation box to appear. Highlight "Yes" and press <Enter> to exit the program.
- If you are performing a process, pressing <Escape> allows you to continue.

Displays

When you first access a menu program, the main menu is displayed. Menus contain task options that can be selected one of two ways:

- You can use the direction arrows to highlight the option you want. Then press <Enter>.
- You can type the first letter of an option to highlight that option. If more than one option starts with the same letter, type enough additional letters to distinguish one option from another. (For example, if both "Search" and "Select" were options, you would have to type "Sel" to highlight "Select.") Once the option you want is highlighted, press <Enter>.

After you select an option from a menu, additional menus and displays appear on the screen. These displays include lists, entry boxes, insets, forms, and confirmation boxes. The displays are explained below.

Lists Lists are similar to menus, and items in lists can be selected the same way menu options are. However, you can also add to and delete items from some lists. Lists may have more than one column, and they may extend below the screen display. Press the Down-arrow key to see additional items. Pressing <Ctrl> <PageDown> takes you to the bottom of the list. Pressing <Ctrl> <PageUp> takes you to the top of the list.

Entry boxes Entry boxes are boxes in which you can type information, such as names for print servers or print queues. The Delete, Backspace, and arrow keys work in these boxes.

Insets Insets display information that cannot be edited. Information in this window cannot be modified

Forms Forms are windows that contain fields. You can move around in a form using the arrow keys or the Enter key. (When you press <Enter>, the cursor moves to the next field in the form.) You can change the information in the field by highlighting a part of the field and pressing <Enter>. What you do next depends on the type of field. Some fields allow you to type in information; others display menu items to select.

Confirmation boxes	Confirmation boxes are displayed whenever you create or delete items (like partitions and volumes). You can confirm or cancel the action by highlighting "Yes" or "No" and pressing the Enter key.

Terms

This manual uses the following two terms to help you select options in menus.

Select	Choose the option you want by highlighting it and pressing <Enter>.
Answer "Yes" or "No"	Select Yes or No.

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We sincerely appreciate your comments about our products.

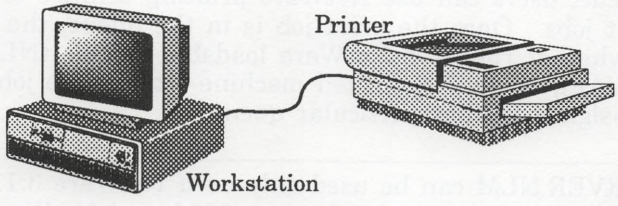
Concepts

This section provides an overview of the NetWare printing services. If this is your first NetWare installation, we strongly suggest that you read this section before you install printing on your network. If you are an experienced NetWare installer, you can turn to "Print Server Installation" on page 15 for specific instructions on setting up your print server.

Printing on a network

To network users, printing from a network workstation seems the same as printing from a standalone workstation, but there are differences.

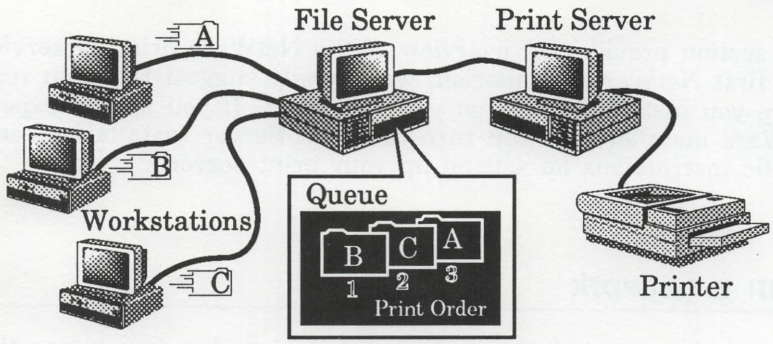
When a user at a standalone workstation sends a print job to a locally attached printer, the job is sent directly to the printer for processing.



Standalone printing environment

However, when a user on a network workstation sends a print job to a network printer, the job is routed first through the file server and then delivered to the printer by the print server.

When a print job leaves a network workstation, it is stored temporarily in a print queue on the file server. Print queues, which are basically subdirectories on the file server, are created during the print server installation. The queue stores the job until the print server can deliver it to the printer. When the printer is ready for the job, the print server moves it from the queue to the printer.



Network printing environment

The NetWare printing services control the network printing process at different stages. When the print job is ready to be sent from the workstation to the queue, users can use NetWare printing utilities to control and monitor their print jobs. Once the print job is in the queue, the NetWare print server----whether run as a NetWare loadable module (NLM), a Value-Added Process (VAP), or on a dedicated machine----takes the job and sends it to the printer assigned to that particular queue.

Note: The PSERVER.NLM can be used only on a NetWare 3.11 network. The PSERVER.VAP can be used only on a 286-based NetWare server or bridge.

NetWare printing services

NetWare printing services consist of the following:

- The NetWare print server
- The remote printer software
- The NetWare printing utilities

NetWare print server

Three types of print servers are available in NetWare: the loadable module (PSERVER.NLM—for NetWare 3.11); the dedicated workstation (PSERVER.EXE); and the VAP (PSERVER.VAP—for 286-based NetWare).

The NetWare print server allows you to increase the number of printers on your network. Moreover, the print server allows you to locate printers where you need them in the workplace, not just next to the file server. For example, you can print to a network printer connected to a dedicated workstation print server, or you can print to a remote network printer connected to a workstation attached to the network. Each type of print server supports 16 printers and can service queues on up to 8 file servers.

PSERVER.NLM

PSERVER.NLM, a NetWare loadable module used with NetWare 3.11, is loaded directly onto the file server. It links to the operating system and sends print jobs from file server queues to the printers assigned to those queues.

Like other loadable modules, PSERVER.NLM can be loaded and unloaded while the file server is running. To add a printer or change your printing setup, you make the necessary changes in PCONSOLE, unload the NLM, and then load the NLM on the file server again.

PSERVER.NLM is copied to the SYS:SYSTEM directory during installation.

PSERVER.EXE

PSERVER.EXE is run on a dedicated DOS workstation. Like the loadable module, it sends print jobs from file server queues to the printers assigned to these queues.

To add a printer or modify your printing setup, you make the changes in PCONSOLE, down the print server, and then reboot the dedicated workstation so that the changes take effect.

PSERVER.EXE is copied into the SYS:PUBLIC directory during installation.

PSERVER.VAP

PSERVER.VAP is run on a 286-based NetWare (v2.15c or above) file server or external bridge. Like other VAPs, the print server VAP runs "on top" of the NetWare operating system. It ties into the operating system and sends print jobs from file server queues to the printers assigned to these queues.

PSERVER.VAP can be stopped and restarted at the file server or bridge console while the file server is running. To add a printer or change your printing setup, you make the necessary changes in PCONSOLE, stop the VAP, and then restart the VAP on the file server or bridge.

PSERVER.VAP is copied into the SYS:SYSTEM directory during installation.

Remote printer software

RPRINTER.EXE allows the print server to use a printer attached directly to your workstation as a remote network printer. RPRINTER is a terminate-and-stay-resident (TSR) program that is loaded into the workstation's memory. It runs in the background until it is removed or until the workstation is rebooted.

To use the printer as a standalone printer, you can remove the program from your workstation's memory or switch to private mode with the PSC command.

Before you can connect a remote printer, you must use PCONSOLE to

- Define the remote printer in the print server account;
- Assign a queue to the remote printer.

The remote printer files are copied into SYS:PUBLIC during installation.

NetWare printing utilities

NetWare printing utilities allow you to set up, control, and monitor the network print process. You can use the utilities to print from applications that are not designed for network printing, to print from diskettes, and to print screen displays.

If you usually print from a network-compatible application, you will seldom need to use the printing utilities except to set up and monitor your print process.

The following chart gives you an idea of what each command is used for. For a complete description of the utilities, see the "Utilities" section on page 47.

Task	Software
Set Up	PCONSOLE, SPOOL
Run Software	PSERVER, RPRINTER
Print Files	CAPTURE, ENDCAP, NPRINT, PCONSOLE
Control Printer/ Print Server	PSC, PCONSOLE
Customize	PRINTDEF, PRINTCON

Setting up network printing

Before you can run the print server, you must run PCONSOLE to set up the following:

- Print queues
- Print servers
- Printers

Print queues

Each print job must be sent to a print queue on the file server. The queue stores the job until the printer is ready.

When you create a print queue, a corresponding directory is created in the SYS:SYSTEM directory. Each print job is stored as a file in the directory created for that queue. When the printer is ready, the print server takes the job from the queue and sends it to the printer assigned to that queue.

You must use PSCONSOLE to create print queues before you set up the print server account. We suggest you create one queue for each printer to simplify your printing setup. Moreover, if you name the queue according to the type or location of the printer, you make it easier to remember which queue is serviced by which printer.

When you create a print queue, user SUPERVISOR is automatically assigned as a print queue operator, and members of group EVERYONE are automatically assigned as print queue users. You can change these default assignments using PCONSOLE.

Queue operators

The supervisor can assign other users to be queue operators as necessary. Queue operators can edit any other user's print job, delete any job from the queue (even if it is being printed), and modify the queue status by changing the operator flags.

Queue operators can also change the order in which print jobs will be serviced. Printers normally service print jobs on a first-come, first-served basis. Operators can change the service mode.

Queue users

To send print jobs to a queue, a network user must be designated as a print queue user. Members of group EVERYONE are automatically assigned as print queue users of each print queue. As a result, all network users (as members of the group EVERYONE) can send print jobs to the print queue.

Queue servers

When you create your print server account, you must assign print queues to the printers you have defined. This step authorizes the print server to take jobs out of the queue and move them to the appropriate printer.

The print server can service print queues from as many as eight file servers. If the print server will be servicing queues on other file servers, you must create a print server account on each file server and attach to each file server. You must either have supervisor privileges on those file servers or enlist the help of the supervisors. For more information, see "Print Server Installation" on page 15.

Print servers

A print server takes print jobs out of a print queue and sends them to the appropriate network printer. After you create your print queues, you must create a print server account using PCONSOLE.

Print server configuration

You must create the print server configuration in PCONSOLE before running the print server. This configuration tells the print server

- The file servers to which the print server should attach;
- The printers the print server supports;
- The queues that will be serviced by each printer;
- The users that should be notified if the printer needs service.

Each time you load the print server, it uses this configuration to set up the printing environment.

We also recommend that you assign the print server a password for security purposes. When the print server comes up, you are prompted for the password if one has been created.

If the print server will be servicing queues on multiple file servers, you must create a print server account on each file server.

When you install a print server, user SUPERVISOR is automatically assigned as a print server operator, and members of group EVERYONE are automatically assigned as print server users. You can change these default assignments in PCONSOLE.

Print server operators

These users have special privileges to control the print server. They can do the following using PCONSOLE:

- Attach the print server to other file servers.
- Determine who should be notified if the printer needs service.
- Issue commands to the printer.
- Change forms for printer.
- Change the queues serviced by a printer.
- Change queue priority.
- Down the print server.

They cannot assign print server users or other print server operators.

Print server users

These users can monitor the status of the print server. All network users (as members of the group EVERYONE) can monitor the use of the print server. You do not need to be a print server user to have the print server send your print jobs to a printer. You need to be a queue user to insert your job in a queue. Once your print job is in the queue, the print server sends it to a printer whether or not you are a print server user.

Printers

As part of creating the print server configuration in PCONSOLE, you must define printers. A print server can support up to 16 printers. You define the printers by specifying whether the printer is local or remote and which port the printer is attached to.

Local network printers

Local network printers are attached directly to the NetWare 3.11 file server running PSERVER.NLM, to the 286-based NetWare (v2.15c or above) file server or bridge running PSERVER.VAP, or to the dedicated workstation print server running PSERVER.EXE. You can attach up to five local network printers, limited only by the number of parallel and serial ports available.

Remote network printers

Remote network printers are attached to network workstations. They can be used as standalone printers, or if you run RPRINTER, they can be used by other network users. Since you can attach a total of 16 printers, the number of remote printers you can use depends on how many printers are attached directly to the print server.

Printing ports

Most workstations can support up to three parallel printing ports (LPT1, LPT2, and LPT3) and two serial ports (COM1 and COM2).

If you are using a serial printer, you must specify the following parameters when you are defining your printer configuration:

- Baud rate
- Data bits
- Stop bits
- Parity
- XON/XOFF protocol

Printer assignments

When you define the printer in PCONSOLE, you also specify which queues are serviced by each printer. We suggest you assign one queue to each printer to simplify your printing setup.

One printer can service multiple queues. For example, you could set up a special high-priority queue that is serviced before any other queue. Each time you specify which queue should be serviced by a printer, you will be prompted for the priority (from 1 to 10) of that queue.

One queue can be serviced by multiple printers. For example, you could have three identical printers printing jobs from a single queue, enabling you to maintain a first-come, first-served approach to printing large numbers of print jobs. If you want a single queue serviced by multiple printers, you need to assign that queue to each printer.

All printer assignments are stored in the print server configuration on the file server. Each time the print server comes up, the print server will check for these assignments.

If you want to change these assignments permanently, see "Change printer configuration" on page 103 in PCONSOLE. If you want to add new printers, you must restart the print server before the new configuration will take effect.

Bringing up the print server

Once the print queues, print servers, and printers are set up, you can bring up the print server.

If you are using PSERVER.NLM, load it on the NetWare 3.11 file server using the NetWare LOAD command.

If you are using PSERVER.EXE, you must first modify the SPX connections on the dedicated workstation's SHELL.CFG file (SPX=50). Then boot the workstation, log in to the network, and run PSERVER.

If you are using PSERVER.VAP on a 286-based NetWare (v2.15c or above) file server, boot the file server and answer "Yes" to the "Load Value-Added Processes?" prompt.

If you are using PSERVER.VAP on an external bridge, you must copy PSERVER.VAP to the same directory that contains the bridge's executable file. Then boot the bridge and answer "Yes" to the "Load Value-Added Processes?" prompt.

Printing files and screen displays

Once the print server is running, you can print from any application designed for network printing, or you can print with the NetWare printing utilities.

Printing from applications designed for network printing

Many applications are designed for network printing. The application documentation includes specific directions for printing files.

If you use applications written for earlier versions of NetWare, they may send print jobs to printer numbers rather than to print queues. If so, you must set up spooler assignments at the file server console. Spooler assignments translate the printer number used by the application into a queue that NetWare can recognize.

When an application tries to send a job to a printer, the spooler intercepts that job and puts it into a queue. The job is then serviced by the printer assigned to that queue.

Note: The printer numbers you specify in your application are not the same printer numbers used in PCONSOLE to define printers on the print server. The printer numbers used by applications are logical printer numbers (0-4 are used by earlier versions of NetWare). They do not correspond to the 16 printer numbers used by the print server.

You should save the spooler assignments by including them in the system AUTOEXEC file (using "Supervisor Options" in SYSCON). Each time the file server comes up, the spooler assignments are set up.

Printing from applications not designed for network printing

If you are using applications that are not designed for network printing, NetWare provides four utilities that allow you to print files: CAPTURE, ENDCAP, NPRINT, and PCONSOLE.

If you do not specify a queue in a CAPTURE or NPRINT command, the print server sends the print job to the queue Spooler 0 has been mapped to. If Spooler 0 has not been mapped to a queue, you will receive an error message and your job will not print. You can specify a default print queue with the SPOOL command. See "Create spooler assignments" on page 35.

CAPTURE/ENDCAP

Use CAPTURE to print screen displays or to print from applications that are not set up to print on networks. CAPTURE redirects any print command issued to a local printing port and sends it to a print queue to be printed.

Printer numbers are no longer supported with CAPTURE. If you are upgrading from NetWare v2.0 and have included the printer option (CAPTURE p=*x*) in your login script, you now need to use the queue option (CAPTURE q=*x*).

You can also use CAPTURE to send data to a file rather than to a print queue.

You can enter CAPTURE at the command line or include it in your login script or an AUTOEXEC.BAT file to set up network printing each time you log in to the file server.

Use ENDCAP to end the CAPTURE command and direct your print commands back to the local workstation printing ports.

For a complete explanation of CAPTURE, see page 49.

NPRINT

Use NPRINT to print files that were created in applications or as ASCII text files. NPRINT routes the files to a specified print queue. You can specify printing parameters at the command line or set up a print job configuration as a shortcut.

To print a file with NPRINT, you must specify the directory path and filename of the file you want sent to the queue. You can use wildcard characters to print more than one file at a time. NPRINT sends your files to the print queue immediately.

To print files that have embedded printer codes, you can use the "No Tabs" option in NPRINT, or you can set up a print job configuration (with PRINTCON), specifying "byte stream" in the "File Contents" option.

For a complete explanation of NPRINT, see page 67.

PCONSOLE

Use PCONSOLE to print files that were created in applications or as ASCII text files. Like NPRINT, PCONSOLE routes the files to a specified print queue. However, PCONSOLE is a menu utility, allowing you to select your file and specify printing parameters from a menu rather than at the command line.

For a complete explanation of how to use PCONSOLE, see page 73.

Customizing the printing environment

If you will be printing frequently from applications that are not designed for network printing, you can customize your printing environment with PRINTDEF and PRINTCON.

PRINTDEF and PRINTCON simplify printing with CAPTURE, NPRINT, and PCONSOLE. We suggest you use PRINTDEF and PRINTCON in two cases only:

- If you have problems resetting your printer to default fonts after using different printing setups.

  For example, if you are printing spreadsheets and letters on the same printer, you may have some problems with the printer resetting after each print job.

- If you want to specify different forms or print configurations when you are using CAPTURE, NPRINT, and PCONSOLE.

PRINTDEF creates a database that stores print forms and print device definitions (print devices are equipment such as printers and plotters).

Print device definition files (.PDF)

These files are used to issue specific commands to the printer at the beginning of a print request. You can set up these files in one of three ways.

- NetWare includes print device definitions for commonly used printers. The print device definitions are automatically placed in the SYS:PUBLIC directory when you install NetWare.
- You can also import print definitions set up on another file server.
- If your printer is not found in the device definitions provided by NetWare, you can set up your own printer definitions using PRINTDEF.

Print job configurations

Print job configurations control the way a job is printed.

PRINTCON uses the information set up in PRINTDEF to create customized print job configurations. PRINTCON creates individual databases of print job configurations for each user.

A primary advantage of setting up print job configurations is that users printing a file using PCONSOLE, CAPTURE, or NPRINT can choose a print job configuration instead of manually entering all the print job specifications each time they want to print. The printer returns to its default settings after the print job is completed.

As you set up printing on the network, you can

- Create print job configurations for all users, using the forms, devices, and modes defined in PRINTDEF;
- Select the default print job configuration;
- Copy print job configurations from one user to another.

You can set up print job configurations for any user. In addition, users can set up their own print job configurations. For a list of the parameters you can specify, see page 115 of PRINTCON.

Sending commands to the print server/printer

You can send commands to the print server and printer with PCONSOLE or PSC (**P**rint **S**erver **C**ommands), the command-line equivalent to PCONSOLE. You can perform the following tasks:

- View the status of one or all the printers.
- Pause the printer temporarily.
- Stop printing the current job.
- Start the printer.
- Mark top of form.
- Rewind a print job (only in PCONSOLE).
- Advance the printer to the top of the next page.
- Mount a new form.
- Down the print server (only in PCONSOLE).

With PSC, you can also remove a remote printer from the list of network printers so that it can be used as a standalone printer.

You can use the DOS SET command to set a default print server and printer number for PSC so that you do not have to specify the print server and printer at the command line each time you execute PSC.

See PSC on page 141 for a complete explanation.

Notes

Print Server Installation

This section explains how to install and run a print server on your network. If your print server will service queues on one file server, you can use the Printing Quick Path card or the following instructions to set up your print server. If, however, you want to service queues on multiple file servers, you must follow the instructions in this section. Be sure to use the Printing Worksheet while you are in this section.

Task	Page
Choose type of print server	15
Set up hardware	16
Install a print server	18
Set up printing on additional file servers (optional)	22
Bring up the print server	24
Run RPRINTER for remote printers	25
Printing on the network	26

Choose type of print server

Before you can install a print server on your network, you must decide which type of print server you will use. Factors to consider when choosing your print server include available hardware resources, security needs, location, and performance.

PSERVER.EXE

If you have an extra workstation that you can dedicate to print services, the dedicated workstation print server offers you three advantages. First, you reduce the workload on your file servers. Second, you can locate your printers wherever you want them on your network.

Finally, by locating your printers and print servers away from the file server, you restrict access to the file server, thus enhancing security.

PSERVER.NLM

If you are using NetWare v3.11 and you do not want to dedicate a computer to print services, you can run the NetWare Loadable Module print server on your 3.11 file server. Like other NLMs, it can be loaded and unloaded without downing the file server.

PSERVER.VAP

If you do not want to dedicate a machine to print services, but you have a NetWare 286 (v2.15c or above) bridge or file server on your internetwork, you could run PSERVER.VAP on the bridge or the file server.

All three print servers can be run with the RPRINTER.EXE program. RPRINTER allows you to connect network printers to any DOS-based workstation attached to your network. This improves security and offers flexibility in locating your printers.

Note: The print server does not service queues on NetWare v2.0a file servers.

Set up hardware

Once you have decided which print server you will use, you need to prepare and connect your network printers.

A print server can service up to 16 printers. Printers can be attached to the file server or the dedicated workstation print server (local printers) or to workstations on the network (remote printers). For more information, see "Concepts" on page 1.

1. Prepare network printers for installation.

1a. Install add-on printer ports if necessary.

Most file servers and workstations approved for a NetWare network come with at least one serial and one parallel port built into the system board. If you plan to attach more printers, you can install printer port add-on boards. See the add-on board documentation for instructions.

Record the interrupt you chose for the add-on board on the Printing Worksheet. Be sure it does not conflict with any other interrupt settings being used.

1b. Set the printer hardware communication parameters.

Parallel printers. For parallel printers, no hardware communication settings are necessary to communicate with the file server.

Serial printers. For serial printers, the data-transfer protocol is defined by the following parameters:

Baud rate
Data bits
Stop bits
Parity
XON/XOFF protocol

Serial printer communication parameters are specific to the type of printer you are installing. Refer to the instructions supplied by the printer hardware manufacturer and make the actual settings now.

2. Connect printers to the file server, the dedicated workstation print server, the bridge, or workstations running remote printers.

- If you are using PSERVER.NLM, connect your printers to the ports on the 3.11 file server.
- If you are using PSERVER.EXE, connect your printers to the ports on the dedicated workstation print server.
- If you are using PSERVER.VAP, connect your printers to the ports on the bridge or file server (NetWare 286 v2.15c or above).
- If you are using RPRINTER.EXE, connect your printers to the workstations running RPRINTER.

3. Record and set interrupts.

Record the interrupts that the printing ports use to signal the processor. If you use built-in printing ports, check the documentation that came with your computer for the printing port interrupt number.

If you cannot change the configuration of your printing port or if you have used all available interrupts, you can use the "polled" designation. Polled printing does not use interrupts. However, it may not send data to the printer as quickly.

Note: If you are using a remote printer, you must select an interrupt.

If you use interrupts, you must select a value. Choose a value between 3 and 7 that does not conflict with any other settings you have made.

Record the machine and the port you connect each printer to and the interrupt each port uses on the Printing Worksheet. You will need this information when you define your printers.

Install a print server

The following steps show you how to install a print server that can service queues on up to eight file servers. Before you can run the print server, you must use PCONSOLE to create print queues and the print server, define printers, and assign queues to printers.

1. **Create print queues.**

1a. Log in as SUPERVISOR.

1b. Enter PCONSOLE and select "Print Queue Information."

1c. Press <Insert> and type the queue name. Then press <Enter>.

Repeat Step 1b for each print queue you want to create. We suggest you create one print queue for each printer to simplify your printing environment.

1d. Assign queue operators and users (optional).

The system automatically assigns SUPERVISOR as print queue operator and EVERYONE as print queue users. To assign different print queue operators and users, press <Enter> to access the "Print Queue Information" menu.

- **Assign queue operators**. Select "Queue Operators" and press <Insert>. Select the user or group you want to assign as a queue operator.
- **Assign queue users**. Select "Queue Users" and press <Insert>. Select the user you want to assign as a queue user.

1e. Press <Escape> to return to the "Print Queue Information" menu.

1f. Press <Escape> as needed to return to the "Available Options" menu.

2. Create print server.

2a. Select "Print Server Information" from the "Available Options" menu.

2b. Press <Insert>, and type the name of the print server. Then press <Enter>.

2c. Select the appropriate print server. The "Print Server Information" menu appears.

2d. Assign print server password and print server operators and users (optional).

Although a password is not required, we suggest you assign one for security reasons.

The system automatically assigns SUPERVISOR as print server operator and EVERYONE as print server users.

To assign a print server password and different operators and users, press <Enter> to access the "Print Server Information" menu.

- **Assign a password.** Select "Change Password." Type in the new password and press <Enter>. Retype the password and press <Enter>.
- **Assign print server operators.** Select "Print Server Operators" and press <Insert>. Select the user or group you want to assign as a print server operator.
- **Assign print server users.** Select "Print Server Users" and press <Insert>. Select the user you want to assign as a print server user.

3. Specify which additional file servers the print server will service (optional).

If you will service queues on only one file server, skip to Step 4.

3a. Select "Print Server Configuration" from the "Print Server Information" menu.

3b. Select "File Servers To Be Serviced." Your default file server appears on the screen and cannot be deleted.

3c. Press <Insert>. The list of available file servers appears. You can select up to seven additional file servers that contain queues you want the print server to service.

If you choose to service queues on multiple file servers, you must complete "Set up printing from additional file servers" on page 22 after you have finished setting up the print server on the current server.

3d. Press <Escape> to return to the "Print Server Configuration" menu. Skip to Step 4b to continue.

4. Define printers.

4a. Select "Print Server Configuration" from the "Print Server Information" menu.

4b. Select "Printer Configuration."

4c. Select the printer number you want to define. Then complete the "Printer # Configuration" form.

Name. Enter the descriptive name of the printer.

Type. Select the appropriate type of printer from the following options:

- **Parallel, LPT or Serial, COM.** Use this option if you are attaching the printers directly to the file server or dedicated workstation print server. Specify the LPT or COM port you use.
- **Remote Parallel, LPT or Remote Serial, COM.** Use this option if you are attaching the printer to a network workstation. Specify the LPT or COM port you use.
- **Remote Other/Unknown.** Use this option to provide the print server information about the printer when you run RPRINTER. This allows you to set up a printing slot for a remote printer without specifying which port the printer is attached to.
- **Defined elsewhere.** Use this option when you are setting up printing for additional file servers. See page 23 for more information.

After you select the printer type, the default settings for the other options are filled in automatically. If you need to change the default settings, see "Printer configuration parameters" on page 100 in PCONSOLE for a complete description of each item.

4d. Press <Escape> and save the changes.

4e. Press <Escape> to return to the "Print Server Configuration Menu."

4f. Set up user notification (optional).

If you want a user to be notified in case the printer needs service, select "Notify List for Printer." Select the appropriate printer and press <Insert>. Select the user, and type in the number of seconds before the user is notified the first and subsequent times. Press <Escape> and save your changes.

Repeat Steps 4b through 4f for each printer you want to define.

5. Assign queues to the printers.

When you assign queues to the printers you have defined, you authorize the print server to service these queues.

5a. Select "Queues Serviced by Printer" from the "Print Server Configuration Menu."

5b. Select the appropriate printer.

5c. Press <Insert>. The "Available Queues" window appears.

5d. Select the queue that this printer will service, and enter a number from 1 to 10 to indicate the priority level of the queue. Press <Enter>.

Repeat Steps 5c and 5d to assign additional queues to this printer.

Repeat Steps 5a through 5d for each printer you have defined.

5e. Press <Escape> to exit PCONSOLE.

Where to go from here

If you are servicing queues on only one file server, you are ready to bring up the print server. Go to page 24 to continue.

If you are servicing queues on multiple file servers, you must complete the following section, "Set up printing on additional file servers," before you can run the print server on your network.

Set up printing on additional file servers

If you chose to service queues on multiple file servers when you installed the print server on the original file server, you must now set up print server accounts and queues on each additional file server. You must have supervisor rights or enlist the help of the network supervisor for each file server.

1. Attach to additional file servers.

1a. Enter PCONSOLE and select "Change Current File Server" from the "Available Options" menu.

1b. Either select a listed file server, or press <Insert> to select from other available file servers.

2. Create print queues.

2a. Select "Print Queue Information" from the "Available Options" menu.

2b. Press <Insert> and type the queue name. Then press <Enter>.

The system assigns SUPERVISOR as print queue operator and EVERYONE as print queue users. To assign different print queue operators and users, see Step 1d on page 18.

2c. Press <Escape> to return to the "Available Options" menu.

3. Create print server.

3a. Select "Print Server Information" from the "Available Options" menu.

3b. Press <Insert>, and type the exact name of the print server you created on your original file server. Then press <Enter>.

3c. Select the appropriate print server. The "Print Server Information" menu appears.

If you want to assign a password for the print server, see Step 2d on page 19. If you assign the same password you used in the original print server account, you will not be prompted for an additional password when it runs.

4. Define printers.

4a. Select "Print Server Configuration" from the "Print Server Information" menu.

4b. Select "Printer Configuration."

4c. Select the printer number you want to define. Use the same printer number that you defined in the print server account on the original file server. Then complete the "Printer # Configuration" form.

Name. Enter the descriptive name of the printer. We suggest you use the same printer name that you used in the original print server account.

Type. Use the "Defined elsewhere" option. Since you have already defined the printer on the original file server, you do not need to enter all the printer information on each file server.

4d. Press <Escape> and save the changes.

4e. Press <Escape> to return to the "Print Server Configuration Menu."

If you want a user on this file server to be notified in case the printer needs service, see Step 4f on page 21.

Repeat Steps 4b through 4e for each printer you want to define.

5. Assign queues to the printers.

When you assign queues to the printers you have defined, you automatically authorize the print server to service these queues.

5a. Select "Queues Serviced by Printer" from the "Print Server Configuration Menu."

5b. Select the appropriate printer.

5c. Press <Insert>. The "Available Queues" window appears.

5d. Select the queue that this printer will service, and enter a number from 1 to 10 to indicate the priority level of the queue. Press <Enter>.

Repeat Steps 5c and 5d to assign additional queues to the printer.

Repeat Steps 5a through 5d for each printer that you have defined.

5e. Press <Escape> to exit PCONSOLE. You are now ready to bring up the print server on your network.

Bring up the print server

Instructions for running each type of print server on your network begin below. Find the type of print server you chose on page 15, and follow the steps for loading it.

Run PSERVER.EXE

PSERVER.EXE and its supporting files (see page 149 for a list of these files) were copied into SYS:PUBLIC during installation. To bring up the print server, you must have access to these files. You can either be logged in to the file server with a search drive mapped to SYS:PUBLIC, or you can have the necessary files on a local floppy or hard disk drive.

1. To ensure that the dedicated workstation has enough open connections, you must modify its SHELL.CFG file. Include the following line in your SHELL.CFG file.

   SPX connections = 60

2. Boot DOS and the NetWare shell.

3. At the dedicated workstation prompt, type

   PSERVER *fileserver/printserver*

Load PSERVER.NLM

PSERVER.NLM was copied into SYS:SYSTEM during installation.

1. To load the print server onto a NetWare v3.11 file server, type the following at the file server console:

   LOAD PSERVER *printserver*

2. Modify the system AUTOEXEC file.

   The file server will automatically load the print server each time the file server comes up if you modify the system AUTOEXEC file. Use "Supervisor Options" in SYSCON, the INSTALL utility, or a DOS text editor to modify this file. Include the following line in the file:

   LOAD PSERVER *printserver*

Load PSERVER.VAP

On a file server. PSERVER.VAP was copied to SYS:SYSTEM during installation. To load the print server, boot the file server. You see the following prompt:

```
Value Added Processes have been defined.  Do you wish to load them?
```

Type "Y" and press <Enter>.

On a bridge. You must copy PSERVER.VAP to the same directory that contains the bridge's executable file. To load the print server, boot the bridge. You see the following prompt:

```
Value Added Processes have been defined.  Do you wish to load them?
```

Type "Y" and press <Enter>.

Run RPRINTER for remote printers

If you want the print server to service a remote printer attached to a workstation, you must run RPRINTER.EXE on that workstation.

RPRINTER.EXE and its supporting files (see page 158) were copied to the SYS:PUBLIC directory during installation. You must have a search drive mapped to this directory or have a copy of the necessary files on a local floppy or hard disk.

You do not need to be logged in to the file server to run RPRINTER; however, you must have the NetWare shell loaded.

Note: You should check the SHELL.CFG file of the workstation attached to the printer for the following line:

```
LOCAL PRINTERS=0
```

If this line appears, delete it or change it to include the appropriate numeric value. Then reboot the workstation so that RPRINTER will work.

You must also include the following line in the SHELL.CFG file:

```
SPX=50
```

At the remote workstation prompt, type

RPRINTER [*printserver printernumber*]

If you type RPRINTER without options, you are prompted to select the print server and the printer number.

Printing on the network

Now that your print server is running, you can print files from any application, or you can print text files and screen displays with the NetWare printing utilities.

Printing from applications designed for network printing

Many applications are designed for network printing. The application documentation will include information about setting up printing on a network.

As you set up printing for an application, remember that NetWare sends print jobs to print queues rather than to printer numbers. If the application you use asks you to specify printer numbers, you must set up spooler assignments at the file server console. See "Create spooler assignments" on page 35.

Printing from applications not designed for network printing

If you are using applications that are not designed for network printing, you can use the following NetWare printing utilities to print files: CAPTURE, ENDCAP, NPRINT, and PCONSOLE.

Each utility is explained fully in the "Utilities" section of this manual, beginning on page 47.

Printing text files

Use NPRINT and PCONSOLE to print ASCII text files. NPRINT is a command line utility, so you must specify parameters at the command line. PCONSOLE is a menu utility and allows you to select files and parameters from a menu.

Both utilities are explained fully in the "Utilities" section, beginning on page 47.

Printing screen displays

Use CAPTURE and ENDCAP to print screen displays. CAPTURE redirects any print commands issued to a local printing port and sends them to a print queue to be printed. ENDCAP ends the CAPTURE command and directs print commands back to the local workstation printing ports.

Both utilities are explained fully in the "Utilities" section of this manual, beginning on page 47.

Where to go from here

If you will be printing primarily from applications designed for network printing, you must set up printing according to the application documentation.

If you will be using the NetWare utilities to print, you should read "Customizing Printing" beginning on page 29.

Notes

Customizing Printing

This section is intended primarily for users who will use applications not designed for network printing. If your application does not print to network printers, you must use the NetWare printing utilities. This section offers some suggestions for ways to simplify printing with NetWare utilities.

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Customize with PRINTDEF and PRINTCON

PRINTDEF and PRINTCON are used to simplify printing with CAPTURE, NPRINT, and PCONSOLE. We suggest you use PRINTDEF and PRINTCON in two cases only:

- If you are having problems with your printer resetting to default fonts when you use different printing setups.

  For example, if you are printing spreadsheets and letters on the same printer, you may have some problems with the printer resetting after each print job.

- If you want to specify different forms or print configurations when you are using CAPTURE, NPRINT, and PCONSOLE.

PRINTDEF creates a database that stores print device definitions (print devices are equipment used to print, such as printers and plotters) and print forms.

For each printer you use, you can set up a print device definition file that issues specific commands to the printer at the beginning of a print request. You can also set up a list of the types of forms you use on the printer.

PRINTCON uses the information set up in PRINTDEF to create customized print job configurations. A print job configuration controls the way a job is printed.

A primary advantage of setting up print job configurations is that when users print a file using PCONSOLE, CAPTURE, or NPRINT, they can choose a print job configuration instead of manually entering all the print job specifications each time they want to print.

If you want to use PRINTCON and PRINTDEF, complete Steps 1 through 3.

1. Define print device definition files.

You can define print devices in three ways:

- You can copy the print device definitions you need from the 30 definitions provided with NetWare. Continue with this step.
- You can set up a print device definition that is not included in those provided with NetWare. See "Define print device functions" in PRINTDEF on page 133.
- If you have access to print device definitions set up on another file server, you can copy them to your file server. See "Copy print device definitions from another file server" in PRINTDEF on page 126.

NetWare includes print device definitions for the printers listed below. The print device definitions are automatically placed in the SYS:PUBLIC directory when you install NetWare.

Apple Imagewriter II
Apple Laserwriter II/Plus
Citizen 120-D
Citizen 20
Citizen 224
CItoh 310/315
CItoh 600
Diablo 630
Epson FX80/FX100
Epson FX-800
Epson FX86e/FX286e
Epson LD-2500
Epson LQ-800/ LQ-1000
Epson LX-80
Epson LX-800
Hewlett-Packard LaserJet I/II
IBM ProPrinter 4201
IBM ProPrinter II/XL
NEC Spinwriter 2050/3050
NEC Spinwriter 8810/8830
NEC Pinwriter P-6
Okidata Microline 192/193
Okidata 290
Okidata 390
Okidata Laserline 6
Panasonic 1080/1080i
Panasonic 1091/1091i
Star NX-1000
Star Gemini 10X
Toshiba P321

The print device definitions are files that have a .PDF extension. For example, the definition file for the Hewlett-Packard LaserJet printer is HPLASER.PDF.

To copy any of the 30 print device definitions, you must be logged in as SUPERVISOR and complete the following steps.

1a. Enter PRINTDEF and select "Print Devices" from the "PrintDef Options" menu.

1b. Select "Import Print Device."

1c. If you are not in the SYS:PUBLIC directory, use the Backspace key to erase the current directory name. Then type the directory name, SYS:PUBLIC, and press <Enter>.

1d. In the "Available .PDFs" list, select the .PDF file you want to add to your PRINTDEF list of files.

If you try to copy a file that has the same name as an existing print device definition, the "New Device Name" entry box appears, prompting you to rename the new print device definition. Type the revised name and press <Enter>.

The new print device definition is added to the print definition database. You are returned to the "Print Device Options" menu.

1e. To save the PRINTDEF database with the new print device definition, press <Escape> twice.

Select "Yes" from the "Exit PrintDef" confirmation box. Then select "Save Data Base, then EXIT."

If you do not need to set up additional print device definitions, continue with Step 2.

If you want to set up additional print device definitions, see page 133 in PRINTDEF.

2. Define the forms your printer uses.

Print forms are the types of paper you print on. You can specify what form you want to print on when you set up print job configurations. For example, you might want some jobs to be printed on letter-size sheets of paper and others on green-bar continuous-feed paper.

The print server recognizes forms by name and number. For your convenience, PRINTDEF assigns form names to the form numbers. If you send a print request that requires a specific form, the file server will not print the job until that form is mounted in the printer.

To define print forms, complete the following steps.

2a. Enter PRINTDEF.

2b. Highlight "Forms" and press <Insert>.

2c. Type the name of the new form you want to define in the "Forms Definition Form" entry box and press <Enter>.

The first character of the form name must be alphabetic, and the form name cannot exceed 12 characters. An underscore (_) is inserted between words instead of a space. Examples of form names include White_8x11, Continuous, Checks, Green_Bar, Normal, and Standard.

1. Type the number you want to assign to the form and press <Enter>.
   - Assign the most commonly used form as form 0, since 0 is the default form. Form numbers must fall between 0 and 255.
2. Type the length of the form in lines per page and press <Enter>.
   - The number must fall between 1 and 255. For example, if your printer is set at six lines per inch, a sheet that measures 8 1/2 by 11 inches would be 66 lines long.
3. Type the width of the form in characters per line and press <Enter>.
   - The number must fall between 1 and 999. Always measure width as though your printer can only print 10 characters per inch. For example, if you are using a sheet that measures 8-1/2 by 11 inches, enter 85 characters per line.

2d. To save changes, press <Escape>. Then answer "Yes" to the "Save Changes" confirmation box by pressing <Enter>. The new form is listed in the "Forms" list.

2e. Repeat Steps 2b through 2d for each form you want to define.

If you need to edit a form, highlight that form in the "Forms" list and press the Modify key (<F3> on most machines). Follow Steps 2b through 2d to make any necessary changes.

To delete a form from the "Forms" list, highlight that form and press <Delete>. Press <Enter> to confirm your decision to delete the form.

2f. To exit PRINTDEF after you have finished defining forms, press <Escape> twice and then <Enter> to access the "Exit Options" menu. Select "Save Data Base, then EXIT."

3. Set up print job configurations.

You can set up a print job configuration by specifying certain parameters. You use these print job configurations as a shortcut when using NPRINT, CAPTURE, and PCONSOLE. You can use the "j=*printjob*" flag with NPRINT and CAPTURE or specify which print job you want to use on the PCONSOLE print form.

The first print job configuration you create becomes your default. When you define other configurations, you can select which will be your default.

Each user has a separate PRINTCON file. You can set up a print job configuration for one user and then copy it to other users. Or you can allow users to set up their own print job configurations.

To set up a print job configuration, complete the following steps.

3a. Enter PRINTCON, and select "Edit Print Job Configurations."

3b. Press <Insert>, and type the name of the print job configuration you want to add in the "Enter New Name" entry box. Then press <Enter>.

For example, you might want to set up a print job configuration to print a monthly report that requires special formatting. You could name the print job configuration MONTH.

The "Edit Print Job Configuration" form is displayed in a format similar to the following.

Edit Print Job Configuration "Jan's_format"

Number of copies:	1	Form name:	CONTINUOUS
File contents:	Text	Print Banner:	Yes
Tab size:	8	Banner name:	SUPERVISOR
Suppress form feed:	Yes	Banner file:	
Notify when done:	Y		
		Enable timeout:	Yes
Local printer:	1	Timeout count:	5
Auto endcap:	Yes		
File server:	PDLC		
Print queue:	PRINTQ_0		
Print server:	ROXANNE		
Device:	HP_LASERJET		
Mode:	(Re-initialize)		

To make changes in the job configuration, highlight the item you want to modify and press <Enter>. Make the appropriate change by typing in a new value or by choosing an item from the menu provided. Press <Enter> to save the change. For a complete explanation of each item, see the list beginning on page 115 in PRINTCON.

3c. Once you have set up your print job configuration, press <Escape>.

3d. Select "Yes" to save the changes. If you want to copy this print job configuration to other users, complete Step 4. If not, you have finished customizing your printing environment.

4. Copy print job configurations.

Each user has a unique print job configuration file that will store any print job configurations created by or for that user. This file, PRINTCON.DAT, is stored in the user's mail directory.

You can copy print job configurations from one user to another. You cannot copy a single job configuration at a time. You must copy the whole file, including all job configurations. When you copy one user's print job configuration file to another user, the copied file overwrites the target user's existing file.

Since users can create their own print job configurations, be sure to check with users before copying a PRINTCON.DAT file over their existing files.

Note: If you have just finished creating or editing print jobs, you have to exit PRINTCON and save your current print job information before copying it to other users.

To copy a print job configuration, complete the following steps.

4a. Enter PRINTCON and select "Supervisor--Copy Print Job Configurations" from the "Available Options" menu.

4b. Type the name of the user whose job configuration file you want to copy in the "Source User" entry box, and press <Enter>.

4c. Type the name of the user whose print job configuration file you want to replace in the "Target User" entry box, and press <Enter>. The file is copied.

4d. Press <Escape> to exit PRINTCON. The second user can now use all the first user's job configurations as his or her own.

Create spooler assignments

Spooler assignments provide support for applications that direct print jobs to printers rather than queues. If your application sends print jobs to printer numbers rather than to print queues, spooler assignments translate the printer number used by the application into a queue that NetWare can recognize.

The Spooler 0 assignment also provides a default print queue for NPRINT and CAPTURE. If you do not specify a queue when using NPRINT or CAPTURE, the print server sends the print job to whichever queue Spooler 0 has been mapped to. If you have not mapped Spooler 0 to a queue, you will receive an error message and your job will not be printed.

To create a spooler assignment, use the following SPOOL command:

SPOOL *n* TO QUEUE *queuename*

For example, to designate the queue PQUEUE as the default queue, you would type the following at the file server console:

SPOOL 0 to queue PQUEUE

If the print server is servicing queues from multiple file servers, type the SPOOL command on each file server. See page 161 for more information on SPOOL.

Notes

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The Task Index lists all tasks that you can perform with the printing utilities. Look up the task you want to complete and then refer to the corresponding utility.

The printing tasks are listed alphabetically under these major categories.

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Mappings/spooler assignments

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Utilities

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Use the utilities to accomplish the following tasks.

Task	Software
Set Up	PCONSOLE, SPOOL
Run Software	PSERVER, RPRINTER
Print Files	CAPTURE, ENDCAP, NPRINT, PCONSOLE
Control Printer/ Print Server	PSC, PCONSOLE
Customize	PRINTDEF, PRINTCON

Each utility is listed with a short summary of what you can do with that utility. If your application supports network printing, you don't have to use PRINTDEF, PRINTCON, and CAPTURE.

CAPTURE	Redirect print output from a workstation to a network printer.
ENDCAP	Revoke the effect of the CAPTURE command.
NPRINT	Print files outside of an application.
PCONSOLE	Set up print server configuration files and print queues. Issue commands to the print server and printers. Print files.
PRINTCON	Simplify issuing the NPRINT and CAPTURE commands by creating print job configurations.
PRINTDEF	Define forms and print devices to create database for use in creating print job configurations in PRINTCON.
PSC	Issue commands and see status of printers and print server.
PSERVER.EXE	The print server executable file for a dedicated workstation.
PSERVER.NLM	The print server loadable module for a NetWare v3.11file server.
PSERVER.VAP	The print server VAP for a NetWare 2.15c file server.
RPRINTER	Use a printer attached to a workstation as a network printer.
SPOOL	Set up default print queues and provide support for old printer calls.

CAPTURE, NPRINT, PRINTCON, and PCONSOLE have been modified from previous versions of NetWare to support the print server.

CAPTURE

Why use CAPTURE?

- To print screen displays 57
- To save data to a network file 58
- To print to a network printer from an application not designed to run on a network 59

Read the additional information about CAPTURE on page 55 to help you use CAPTURE more effectively.

Command format

CAPTURE [*option* ...]

Replace *option* with one or more of the options listed below.

SHow	**Form=*form* or *n***
NOTIfy	**Copies=*n***
NoNOTIfy	**Tabs=*n***
TImeout=*n*	**NoTabs**
Autoendcap	**NoBanner**
NoAutoendcap	**NAMe=*name***
Local=*n*	**Banner=*bannername***
Server=*fileserver*	**FormFeed**
Queue=*queuename*	**NoFormFeed**
CReate=*path*	**Keep**
Job=*jobconfiguration*	

Instead of specifying these options in your CAPTURE command, you can define your preferred print options and set them up in PRINTCON as unchanging configurations. You can then use the Job option to indicate which print job configuration to use. If you do not specify any options in the CAPTURE command, your data will be printed according to the default print job configuration defined in PRINTCON.

If no print job configurations are defined, CAPTURE follows the defaults listed with the CAPTURE options. An explanation of each option begins on the next page.

Note: CAPTURE no longer supports printer numbers. Send print requests to queues rather than to printers. Print server names are also not supported in CAPTURE.

Command options

SHow

Include this option to view the current status of LPT ports (local parallel printing ports):

- Whether they are captured
- Whether they are set to send data to a network printer or to a file
- How the CAPTURE options are set

Including the SHow option does not affect the capture of an LPT port. You cannot use SHow with other CAPTURE options.

NOTIfy

Include this option if you want to be notified that your data has been printed. A message appears across the bottom of your screen: *Jobname* printed on *Printername*. This option does not notify you if the printer has a problem or if your job cannot be printed.

Default: NOTIfy disabled

NoNOTIfy

Include this option if you do not want to be notified that your data has been printed. You need to use this option only if NOTIfy is enabled in your print job configuration and you want to disable it. Do not confuse this option with the notification option in PCONSOLE that informs designated users when the printer is having problems.

Default: NoNOTIfy enabled

TImeout=*n*

Include this option if you want to print from an application without exiting the application. Replace *n* with a number (1 through 1,000). The TImeout option sends data to the printer a specified number of seconds after the application last writes to a file. If your timeout is not long enough, you may have problems printing some files, especially files with graphics. Increase the timeout if only parts of files are being printed or if the files do not print at all.

Default: TI=0 (TImeout disabled)

Autoendcap

Include this option if you want to send data to a network printer or to a network file when you exit or enter an application. Autoendcap is useful if you want to save several different screens or files from the same application to the same network file. Autoendcap does not automatically end the capture of an LPT port as its name implies.

Default: Autoendcap enabled

NoAutoendcap

Include this option to prevent data from being sent to a network printer or a file when you enter or exit an application. This option is useful if you want to save different screens or files from different applications to the same network file.

Local=*n*

Include this option to indicate which of your workstation's LPT ports (local parallel printing ports) to capture. Replace *n* with 1, 2, or 3. The workstation doesn't need to have three physical LPT ports; these are logical connections.

Default: L=1

Server=*fileserver*

Include this option to indicate which file server the print job should be sent to. Replace *fileserver* with the name of the file server.

Default: Your default file server

Queue=*queuename*

Include this option to indicate which queue the print job should be sent to. If multiple queues are mapped to a printer, you must include this option to specify the appropriate queue. Replace *queuename* with the name of a queue. If you do not specify a queue name, CAPTURE defaults to the queue that Spooler 0 has been assigned to.

CReate=*path*

Include this option to create a file in which to store data. Specify where you want to store the file (file server, volume, directory, and filename). You must use a network drive with the CReate option. If you want to save the file in your default (current) directory, replace *path* with the name of the file you want to create.

Job=*jobconfiguration*

Include this option to specify which print job configuration to use. You can define print job configurations using PRINTCON. (The first job configuration created in PRINTCON is the default unless you change it.) Replace *jobconfiguration* with the name of the print job configuration.

Form=*form* or *n*

Include this option to specify which form to print the job on. Replace *form* with the name of the form, or replace *n* with the number of the form. (You must define forms using PRINTDEF before users can use form names instead of numbers.)

Default: F=0

Copies=*n*

Include this option to indicate how many copies you want to print. Replace *n* with the number of copies (1 to 999).

Default: C=1

Tabs=*n*

Include this option if your application does not have a print formatter (most applications do). Replace *n* with a number (0 to 18). The number of spaces you specify indicates the number of characters in one tab stop.

Default: T=8

NoTabs

Include this option if your application has a print formatter (most applications produce printer-specific codes). This option ensures that all the tab characters in your print job arrives at the printer unchanged. However, the appearance of the tab character varies according to the printer that you use. Use this option if you have problems printing graphics.

NoBanner

Include this option to specify that no banner page be printed.

NAMe=*name*

Include this option to specify the text that appears on the upper part of the banner page. Replace *name* with any word or phrase up to 12 characters long.

Default: the username you used to log in

Banner=*bannername*

Include this option to specify the text that appears on the lower part of the banner page. Replace *bannername* with any word or phrase up to 12 characters long. You can use an underline character to represent a space between words (for example, ON_THE_GO); however, the underline character will be printed.

Default: B=LST:

FormFeed

Include this option to enable form feed after your print job has been printed. FormFeed enabled means that the printer starts printing the next job at the top of the next sheet of paper. However, if an application automatically enables form feed at the end of a file, adding this option causes an extra blank page to be fed through.

Default: FormFeed enabled

NoFormFeed

Include this option to disable form feed at the printer.

Keep

Include this option to ensure that the file server keeps all data it receives from your workstation if your workstation hangs or loses power while you are capturing data to the file server. When the file server notices your workstation is no longer connected, it sends the data it received from your workstation to a print queue for printing. Use this option if you plan to capture data over several hours.

If you do not include the Keep option and your workstation hangs during the capture, the file server will discard the data it has received.

Additional information

End the CAPTURE command

The data you have captured is not printed or sent to a file unless you end CAPTURE and send your data to a network printer or a file. End CAPTURE and send data by using one of the following:

- Autoendcap option
- TImeout option
- ENDCAP command

The Autoendcap option is the default setting for CAPTURE. Autoendcap sends data to the printer when (but not until) you exit an application. Autoendcap is useful if you want to save several different screens or files from the same application to the same network file. A new capture session starts automatically.

The TImeout option sends data to the printer a specified number of seconds after the application last writes to a file. TImeout is useful if you want to print from an application without exiting the application. After the specified amount of time, a new capture session starts automatically.

The ENDCAP command performs two functions:

- Sends data to the printer
- Ends the capture of an LPT port

To use ENDCAP effectively to send data to the printer, disable the Autoendcap and the TImeout options in CAPTURE:

```
CAPTURE NA TI=0  <Enter>
```

The data will not be sent to the printer until you enter the ENDCAP command at the DOS prompt.

Prevent your workstation from hanging

Your workstation might hang if you press the <Shift> <Print Screen> keys when none of your LPT ports are captured and no local printers are attached to your workstation. To prevent this, include the following in the SHELL.CFG file on your workstation boot diskette:

```
LOCAL PRINTERS = 0
```

Use CAPTURE in your login script

If you want CAPTURE to be active permanently, you can add a CAPTURE command to the system login script or to a user login script. In the login script, type

```
#CAPTURE TI=n
```

or

```
#CAPTURE A
```

You can include any other command options you want. If you include the TImeout or Autoendcap option in the login script, you only need to press <Shift> <Print Screen> to print.

If you type a CAPTURE command at the DOS prompt, it will override the command in your login script.

System login script

Suppose you want to include a CAPTURE command in the system login script for group ADMIN so they can use Printer0 on server ADMIN-PRINT. You first need to know which queue is mapped to Printer0. For this example, QUEUE0 is mapped to Printer0. Type the following in the system login script:

```
if member of "ADMIN" then begin
#capture s=admin-print q=queue0 ti=3 nb
end
```

User login script

Suppose a user often prints from a non-network application by using CAPTURE. The user wants to send a file to printer 1, which is servicing QUEUE1. The user wants to print the file without a banner or a form feed and wants the file to go to the print queue 5 seconds after the application last writes to the file. Type the following in the user login script:

```
#capture q=queue1 nb nff ti=5
```

Print screen displays

To print information displayed on your screen, follow these steps.

1. Before you access the screen you want to print, type

   CAPTURE <Enter>

   You can include any of the CAPTURE options except SHow.
2. Access the screen you want to print.
3. Press

   <Shift> <Print Screen>

Note: Your workstation might hang if you press the <Shift> <Print Screen> keys when none of your LPT ports are captured and no local printers are attached to your workstation. To prevent this, include the following in the SHELL.CFG file on your workstation boot diskette:

LOCAL PRINTERS = 0

---

4. If you want to print more screens, repeat Steps 2 and 3.
5. When you have selected the screens you want printed, return to the DOS prompt and type the following:

   ENDCAP <Enter>

ENDCAP sends your print job to the default print queue of your default file server, and the job is printed. ENDCAP also ends the capture of your LPT port.

Save data to a network file

To save information displayed on your screen to a network file, follow these steps.

1. Type

   CAPTURE CR=*path* <Enter>

   Replace *path* with the directory path including the filename where you want to save a file. You can include any of the CAPTURE options except SHow.

2. Access the screen you want to print.

3. Press

   <Shift> <Print Screen>

4. If you want to save additional screens to the file, repeat Steps 2 and 3.

5. Return to the DOS prompt.

6. To end the capture of your LPT1 port, type

   ENDCAP <Enter>

Save data from several applications

Suppose you want to move in and out of applications, saving data from each application, and store all the data in one file called TESTFILE in your default directory.

Use the CReate and the NoAutoendcap options. Specifying NoAutoendcap allows you to move in and out of applications without prematurely closing the file you are creating. Type

CAPTURE CR=TESTFILE NA <Enter>

Save data to a directory other than your default directory

Suppose you want to save data to a file called TESTFILE that is located in the REPORTS directory.

1. Map a drive to the REPORTS directory. For example,

   MAP G:=COUNT/SYS:/SALES/REPORTS <Enter>

2. Use the CReate and the NoAutoendcap options. Specifying NoAutoendcap allows you to move in and out of applications without prematurely closing the file you are creating. Type

   CAPTURE CR=G:TESTFILE NA <Enter>

Save data to a file server you are not attached to

If you specify a file server you are not attached to in your CAPTURE command, CAPTURE will attach you as user GUEST unless one of the following applies.

- GUEST requires a password. In this case, you are prompted to enter both a username and a password before you continue with the capture.
- GUEST has no effective rights to the file server's print queue or disk space. In this case, you cannot create or send a file to that queue or disk space.

Print to a network printer

To print to a network printer from an application that is not designed to run on a network, follow these steps.

1. Type

   CAPTURE <Enter>

   You can include any of the CAPTURE options except SHow.

2. Enter your application. If you need to create a file, do so.

3. Print your data using the print keys for your application.

   ❖ *How is data sent to print queues?* Your application sends the print job to the LPT DOS devices. Before the print job arrives at the LPT device, CAPTURE redirects it to the default print queue of your default file server.

4. When you have finished printing the files you need, exit the application.

   ❖ *When will my job be queued?* If Autoendcap is enabled, your job will be queued when you exit the application. If TImeout is enabled, the job will be sent to the print queue in the specified number of seconds. Otherwise, your job is queued when you type ENDCAP.

5. To end the capture of your LPT port, type

   ENDCAP <Enter>

Print data without exiting an application

Use the TImeout option to print from an application without exiting it. You can use the NOTIfy option if you want to know when your job has been printed. Type

CAPTURE TI=2 NOTI <Enter>

Two seconds after the application last writes to the file, CAPTURE sends your print job to the default print queue of your default file server, and the job is queued. A message appears across the bottom of your screen indicating that your job has been printed:

```
LPT1 Catch printed on printername
```

Print data to different LPT ports

Suppose you often use CAPTURE to print from two different applications: AppA and AppB. AppA does not allow you to designate which LPT port to send print jobs to; therefore, its print jobs are sent to LPT1. However, AppB has a SETUP program that allows you to designate an LPT port.

Suppose also that AppA requires a different form than AppB and that you want to put form A (for AppA) in Printer1 and form B (for AppB) in Printer2. Printer1 is servicing QUEUE0 and Printer2 is servicing QUEUE2.

Use the SETUP program in AppB to send your data through LPT2 to Printer2.

When you capture data from AppA, type

```
CAPTURE L=1 q=queue1  <Enter>
```

When you capture data from AppB, type

```
CAPTURE L=2 q=queue2  <Enter>
```

You can add other options to these commands.

Notes

ENDCAP

END CAPture

Why use ENDCAP?

Use ENDCAP to end the capture of one or more of your workstation's LPT ports (local parallel printing ports). You can also use ENDCAP to send data to a network printer or a file. (You will always use CAPTURE before using ENDCAP; see CAPTURE.)

Command format

ENDCAP [*option* ...]

Replace *option* with one or more of the options listed below. If you do not specify an option, ENDCAP ends the capture of LPT1.

Command options

Local=*n*

Include this option to end the capture of the specified LPT port. Replace *n* with 1, 2, or 3.

ALL

Include this option to end the capture of all LPT ports with one ENDCAP command.

Cancel

Include this option to end the capture of LPT1 and to discard any data without printing it.

CancelLocal=*n*

Include this option to end the capture of the specified LPT port and to discard any data without printing it. Replace *n* with 1, 2, or 3.

Cancel ALL

Include this option to end the capture of all LPT ports and to discard any data without printing it.

End the capture of an LPT port

The following steps explain how to capture an LPT port (in this case LPT1, the default parallel printing port) and how to end the capture of that port.

1. Type

   CAPTURE <Enter>

2. You can view the status of the LPT ports and the default print settings for CAPTURE by typing

   CAPTURE SH <Enter>

   Information similar to the following appears:

```
LPT1:  Capturing data to server COUNT
Capture Defaults:Enabled   Automatic Endcap:Enabled
Banner :LST        Form Feed :Yes
Copies :1          Tabs      :Converted to 8 spaces
Form   :0          Timeout Count :Disabled

LPT2:  Capturing Is Not Currently Active.

LPT3:  Capturing Is Not Currently Active.
```

   Note that LPT1 is currently captured to send data to file server COUNT.

3. To end the capture of LPT1, type

   ENDCAP <Enter>

4. To view the effect of the ENDCAP command, type

   CAPTURE SH <Enter>

Information similar to the following appears:

```
LPT1:    Capturing Is Not Currently Active.
LPT2:    Capturing Is Not Currently Active.
LPT3:    Capturing Is Not Currently Active.
```

Note that LPT1 is no longer captured.

End the capture of LPT2

Type

ENDCAP L=2 <Enter>

To cancel the capture of LPT2 and to discard any data waiting to be sent to a network printer or a file, use the CancelLocal option. Type

ENDCAP CL=2 <Enter>

Send data to a network printer or a file

You can use ENDCAP to send data to a network printer or a file. To use ENDCAP effectively to send data, first disable the Autoendcap and TImeout options by typing the following options in your CAPTURE command:

CAPTURE NA TI=0 <Enter>

Now you can enter and exit applications and send data to network printers or files. However, no data is actually printed or saved until after you issue an ENDCAP command. This method is useful if you want to save several screens or files from different applications to the same network file.

See CAPTURE for information on using the Autoendcap and Timeout options to send data to a network printer or to a file.

Notes

NPRINT

Network PRINTer

Why use NPRINT?

Use NPRINT to print files from outside an application to a network printer. These files must be DOS text files or files that have been formatted by an application for your specific printer.

Command format

NPRINT *path* [*option* ...]

Replace *path* with a directory path leading to and including the name of the file you want to print.

You can print several files by including the names of files separated by commas or by using a wildcard character. (Each NPRINT command can be no more than 128 characters long.)

Replace *option* in the command format with one or more of the options listed below.

NOTIfy	**T**abs=*n*
NoNOTIfy	**NoT**abs
Print**S**erver=*printserver*	**NoB**anner
Server=*fileserver*	**NAM**e=*name*
Queue=*queuename*	**B**anner=*bannername*
Job=*jobconfiguration*	**NoFormF**eed
Form=*form* or *n*	**FormF**eed
Copies=*n*	**D**elete

Instead of specifying these options in NPRINT, you can define your preferred print options and set them up in PRINTCON as unchanging configurations. You can then use the Job option to indicate which print job configuration you want to use.

If you don't specify any options in the NPRINT command, your data will be printed according to the default print job configuration defined in PRINTCON.

If no print job configurations are defined, NPRINT will follow the defaults listed with the NPRINT options. The options are explained, beginning on the next page.

Command options

NOTIfy

Include this option if you want to be notified that your data has printed. A message appears across the bottom of your screen: *Jobname* printed on *Printername*.

Default: NOTIfy disabled

NoNOTIfy

Include this option if you do not want to be notified that your data has printed. You need to use this option only if NOTIfy is enabled in your print job configuration and you want to disable it.

Default: NoNOTIfy enabled

PrintServer=*printserver*

Include this option to specify which print server the data should be sent to for printing. Replace *printserver* with the name of a print server.

Server=*fileserver*

Include this option to indicate which file server the data should be sent to for printing. Replace *fileserver* with the name of the file server.

Default: your default server

Queue=*queuename*

Include this option to indicate which queue the print job should be sent to. Replace *queuename* with the name of the queue. There is no default queue set up unless you have mapped SPOOL 0 to a queue or created a print job configuration in PRINTCON.

Job=*jobconfiguration*

Include this option to specify which print job configuration to use. You can define job configurations using PRINTCON. (The first job configuration created in PRINTCON is the default.) Replace *jobconfiguration* with the name of the print job configuration.

Form=*form* or *n*

Include this option to specify which form to print your job on. Replace *form* with the name of the form, or replace *n* with the number of the form. (You must define forms in PRINTDEF before users can use this option.)

Copies=*n*

Include this option to indicate how many copies you want to print. Replace *n* with the number of copies (1 to 999).

Default: C=1

Tabs=*n*

Include this option if your application does not have a print device driver (most applications produce printer-specific codes). Replace *n* with a number (0 to 18). The number of spaces you specify replaces all tab characters in your print job.

Default: T=8

NoTabs

Include this option if your application has a print device driver (most applications do). This option ensures that all the tabs in your print job arrive at the printer unchanged. However, the appearance of the tab character varies according to the printer you use.

NoBanner

Include this option to specify that no banner page be printed.

NAMe=*name*

Include this option to specify the text that appears on the upper part of the banner page. Replace *name* with any word or phrase up to 12 characters long.

Default: the username you used to log in

Banner=*bannername*

Include this option to specify the text that appears on the lower part of the banner page. Replace *bannername* with any word or phrase up to 12 characters long. You can use an underline character to represent a space between words (for example, ON_THE_GO; however, the underline character will be printed.

Default: The name of the file you are printing

FormFeed

Include this option to enable form feed after your print job is printed. FormFeed enabled means the printer starts printing the next job at the top of the next sheet of paper. However, if an application automatically enables form feed at the end of a file, including form feed causes an extra blank page to be fed through.

Default: FormFeed enabled

NoFormFeed

Include this option to disable form feed at the printer.

Delete

Include this option to automatically erase the file after you print it.

Print a file from outside an application

Print from your default directory

Suppose you want to print a file called TONY.RPT located in the TONY directory. Suppose also that drive F is mapped to the TONY directory as follows:

Drive F: = COUNT/SYS:HOME/TONY

If drive F is your default drive, type

NPRINT TONY.RPT <Enter>

Print from any directory

Suppose you want to print a file called TONY.RPT located in the TONY directory. Suppose also that drive F is mapped to the TONY directory, but drive F is not your default drive. Type

NPRINT F:TONY.RPT <Enter>

If you do not have a drive mapped to the TONY directory, type the directory path leading to and including the file you want to print.

NPRINT COUNT/SYS:HOME/TONY/TONY.RPT <Enter>

If you have a drive mapped to file server COUNT and volume SYS, type the drive letter and then the directories and file:

NPRINT G:/HOME/TONY/TONY.RPT <Enter>

Print data using NPRINT options

Suppose you want to print a file called TONY.RPT located in the TONY directory. Drive F is mapped to the TONY directory as follows:

Drive F: = COUNT/SYS:HOME/TONY

Suppose you also want to do the following:

- Print the file on Printer2 connected to print server SALES. QUEUE2 is serviced by Printer2 (Q=2 S=SALES).
- Print 4 copies (C=4).
- Print the word *CONFIDENTIAL* on the bottom half of the banner page (B=CONFIDENTIAL).

The order in which you type the options is not important.

If drive F is your default drive, type

```
NPRINT TONY.RPT S=SALES Q=QUEUE2 C=4 B=CONFIDENTIAL  <Enter>
```

If drive F is not your default drive, type

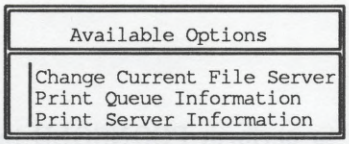
```
NPRINT F:TONY.RPT S=SALES Q=QUEUE2 C=4 B=CONFIDENTIAL  <Enter>
```

PCONSOLE

Print CONSOLE

Why use PCONSOLE?

Use PCONSOLE to set up the print server and print queues, to control network printing, and to view information about network printing.



Change Current File Server

Use this option to attach to or log out of file servers, to select the current file server, or to change your username on the file server. For a complete list of tasks, see "Change Current File Server tasks." 74

Print Queue Information

Use this option to complete print queue tasks, including creating queues, assigning operators and users, authorizing print servers, handling print jobs, and viewing information. For a complete list of tasks, see "Print Queue Information tasks." 76

Print Server Information

Use this option to set up, delete, or down print servers; attach to file servers; define and control printers; service queues; assign operators and users; and view printing information. For a complete list of tasks, see "Print Server Information tasks." 93

Change Current File Server tasks

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Attach to file servers

You must be attached to a file server to perform PCONSOLE tasks for that file server.

1. Enter PCONSOLE and select "Change Current File Server" from the "Available Options" menu. A list of the file servers you are attached to is displayed.
2. Press <Insert> to list the available file servers.
3. Select the appropriate file server from the "Other File Servers" list.
4. Type your username in the "User Name" entry box; then press <Enter>.
5. If the username you enter has a password, the "Password" entry box appears. Type the password and press <Enter>.

Log out of additional file servers

You cannot log out of your default file server in PCONSOLE. To log out of other file servers, complete the following steps.

1. Enter PCONSOLE and select "Change Current File Server" from the "Available Options" menu.
2. Highlight a file server in the "File Server/User Name" list, or use <F5> (the Mark key) to highlight multiple servers. Then press <Delete>.
3. Select "Yes" from the "Logout From Server" (or "Logout From All Marked Servers") box.

Select the current file server

Before you can complete PCONSOLE tasks for a file server, you must select that file server as your current server.

1. Enter PCONSOLE and select "Change Current File Server" from the "Available Options" menu.
2. Select a current file server from the "File Server/User Name" list.

Change to a different username on additional file servers

To access information on another file server, you can enter a username other than your own if you know the password for the other username. However, you cannot change your username on the default file server.

1. Enter PCONSOLE and select "Change Current File Server" from the "Available Options" menu.
2. Highlight the file server on which you want to specify a different username; then press <F3> (the Modify key).
3. Type the new username in the "New User Name" entry box and press <Enter>.
4. If the username you typed has a password, the "Password" entry box is displayed. Type in the password and press <Enter>. The new username appears next to the file server in the "File Server/User Name" list.

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Create print queues

Create a print queue by completing the following steps. After you create the queue, you must assign the queue to a printer. See "Assign queues to printers" on page 109.

Note: You can assign queues only to print servers that have already been created. See "Create print servers" on page 94.

---

1. Enter PCONSOLE and select "Print Queue Information" from the "Available Options" menu.
2. Press <Insert> and type a name for the new queue in the "New Print Queue Name" box. Then press <Enter>.

Delete print queues

1. Enter PCONSOLE and select "Print Queue Information" from the "Available Options" menu.
2. Highlight the queue in the "Print Queues" list and press <Delete>.
3. Select "Yes" in the confirmation box.

Rename print queues

When you rename a queue, you must either assign the newly named queue to a printer and create a corresponding spooler or modify the name of the print queue in any mappings you have saved in the system AUTOEXEC file.

If you have used the queue option in any CAPTURE commands (CAPTURE q=*queuename*), you must also rename the queue there.

You can rename a print queue by completing the following steps.

1. Enter PCONSOLE and select "Print Queue Information" from the "Available Options" menu.
2. Highlight the queue in the "Print Queues" list whose name you want to change and press <F3> (the Modify key).
3. Use the Backspace key to delete the old name from the "Rename Print Queue To" list. Type the new name and press <Enter>.

Assign queue operators

When you create a queue using PCONSOLE, you can specify which users control the queue. The user SUPERVISOR is automatically assigned as a queue operator.

Users designated as print queue operators can edit any other user's print queue entry information, delete any entry from the queue (even if it is in the process of being printed), and modify the queue status by changing the operator flags. Queue operators can also change the order in which print jobs are serviced. Tasks that can be performed by queue operators are explained on the following pages.

You can assign queue operators by completing the following steps.

1. Enter PCONSOLE and select "Print Queue Information" from the "Available Options" menu.
2. Select the appropriate queue from the "Print Queues" list.
3. Select "Queue Operators" from the "Print Queue Information" menu.

4. Press <Insert> to display the "Queue Operator Candidates" list.
5. Select the users or groups you want to designate as queue operators. Use <F5> (the Mark key) to select multiple users or groups.

Remove queue operators

You can remove queue operators from a queue by completing the following tasks.

1. Enter PCONSOLE and select "Print Queue Information" from the "Available Topics" menu.
2. The "Print Queues" list appears. Select the queue you want to remove an operator from.
3. Select "Queue Operators" from the "Print Queue Information" box.
4. Delete the operator from the "Queue Operators" list.

Assign queue users

When you create a queue using PCONSOLE, you can specify which users can send print jobs to the queue. The group EVERYONE is automatically assigned as a queue user.

You can assign queue users by completing the following steps.

1. Enter PCONSOLE and select "Print Queue Information" from the "Available Options" menu. The "Print Queues" list is displayed.
2. Select the queue you want to assign queue users to. The "Print Queue Information" menu is displayed.
3. Select "Queue Users" to display the "Queue Users" list.
4. Press <Insert> to access the "Queue User Candidates" list.
5. Select the users or the groups you want to assign as queue users, or use <F5> (the Mark key) to select multiple users or groups.

Remove queue users

If you want to restrict who can use a queue, remove group EVERYONE from the queue. You can remove queue users from a print queue by completing the following steps.

1. Enter PCONSOLE and select "Print Queue Information" from the "Available Topics" menu.
2. Select a queue from the "Print Queues List."
3. Select "Queue Users" from the "Print Queue Information" box.
4. Highlight the users or groups you want to remove as users on the queue; use <F5> (the Mark key) to highlight multiple users or groups. Then press <Delete>.
5. Select "Yes" at the confirmation box.

Change operator flags

1. Enter PCONSOLE and select "Print Queue Information" from the "Available Topics" menu.
2. Select the queue whose operator flags you want to change from the "Print Queues" list.
3. Select "Current Queue Status" from the "Print Queue Information" menu.
4. Use the arrow keys to highlight the flag you want to change. Type Y for "Yes" or N for "No."

The operator flags are explained on the following pages.

Operator flags

Users can place entries in queue

If the queue operator sets this flag to "No," users cannot submit jobs to the queue.

Servers can service entries in queue

If the queue operator sets this flag to "No," the print server cannot service jobs in the queue.

New servers can attach to queue

If the queue operator sets this flag to "No," additional print servers cannot attach to the queue.

Authorize a print server to service a queue

A print server takes print jobs from the queue and sends them to the printer. Before you can add a print server to a queue, you must create the print server (see page 94).

1. Enter PCONSOLE and select "Print Queue Information" from the "Available Options" menu.
2. Select a queue from the "Print Queues" list.
3. Select "Queue Servers" from the "Print Queue Information" menu.
4. Press <Insert> to view the available print servers. The "Queue Server Candidates" entry box is displayed.
5. Select the queue server you want to add.

Remove print servers from a queue

You can remove print servers by completing the following steps.

1. Enter PCONSOLE and select "Print Queue Information" from the "Available Options" menu.
2. Select a queue from the "Print Queues" list.
3. Select "Queue Servers" from the "Print Queue Information" menu.
4. Highlight the print server name in the "Queue Servers" list and press <Delete>.
5. Select "Yes" at the confirmation box.

View currently attached print servers

Only print servers that are attached to a queue can service that queue. (For an explanation of print servers, see "Create print servers" on page 94.) To see which servers are currently attached to a queue, complete the following steps.

1. Enter PCONSOLE. Select "Print Queue Information" from the "Available Options" menu. A list of the defined print queues is displayed.
2. Select the print queue whose attached print servers you want to view. The "Print Queue Information" list appears.
3. Select "Currently Attached Servers." The "Currently Attached Servers" list appears.

List the jobs in a queue

To see which jobs are waiting in a queue to be printed, complete the following steps.

1. Enter PCONSOLE and select "Print Queue Information" from the "Available Options" menu.
2. Select the print queue whose print jobs you want to view.
3. Select "Current Print Job Entries" from the "Print Queue Information" list.

Print a file

To print a file, choose the queue you want the file sent to. Then choose the file you want to print. Finally, define the way the job is printed by setting your own print job configurations or by choosing the PCONSOLE defaults. (See "Set print job parameters" on page 85.)

Note: Print queue operators cannot add a print job to a queue unless they are also queue users.

To send a file to a print queue, complete the following steps.

1. Enter PCONSOLE and select "Print Queue Information" from the "Available Options" menu.
2. Select the print queue you want the print job sent to. The "Print Queue Information" list appears.
3. Select "Current Print Job Entries." The contents of the queue are displayed.

4. Press <Insert> to add a print job entry. The "Select Directory to Print From" entry box appears, displaying your current directory path.

   - To print a file contained in your current directory, press <Enter>. Go to "Choose the file" on page 85.
   - If you want to print from another directory, use the Backspace key to erase the current directory path. Then type the new directory path in the entry box. Go to "Choose the file" on page 85.
   - If you do not know the directory path, complete the sections below as needed. For example, if you know the name of the file server and the volume, type them and go to "Choose directories" below.

Choose the file server

5. Use the Backspace key to delete the contents of the "Select Directory to Print From" box.
6. Press <Insert> to display a list of the available file servers and local drives.
7. Select the file server or the local drive that contains the file you want to print. The file server or the local drive is added to the directory path in the "Select Directory to Print From" entry box, and the "Volumes" list is displayed.

Choose the volume

8. Select the volume or the local directory that contains the file you want to print. The volume is added to the "Select Directory to Print From" box, and the "Network Directories" list appears.

Choose directories

9. Select a directory. The directory is added to the "Select Directory" box.
10. Repeat Step 9 as many times as necessary to complete the directory path. Then press <Escape>.

Choose the file

11. Press <Enter>. The "Available Files" list appears.

12. Select the file you want to print, or use <F5> (the Mark key) to select multiple files.

13. Press <Enter> at the "Print Job Configurations" window.

14. The "New Print Job to be Submitted" window appears. You can use the arrow keys to move around the window. Change parameters if you need to. See "Print job parameter definitions" on page 86 for more information.

15. Press <Escape>.

16. Select "Yes" at the confirmation box.

Set print job parameters

After you specify the correct directory path and choose the file you want to print, you must tell the printer how to print that job. After you specify a print job configuration, the job is sent to the specified queue.

Some of the values defined in PRINTCON are also used in PCONSOLE. They include "Number of copies," "File contents," "Tab size," "Suppress form feed," "Form," "Print banner," "Banner name," and "Banner file."

However, some of the printing parameters in PCONSOLE vary from those in PRINTCON. In addition, other parameters can also be defined using PCONSOLE. They include "Description," "User Hold," "Operator Hold," "Server Sequence," "Job entry date," "Defer printing," "Target server," "Target date," and "Target time." For an explanation of the parameters you can change or set, see "Print job parameter definitions" on page 86.

To specify parameters or modify those you have already set, complete the following steps.

1. Enter PCONSOLE and select "Print Queue Information" from the "Available Options" menu.

2. The "Print Queues" list appears. Select the print queue you want the print job sent to.

3. Select "Current Print Job Entries" from the "Print Queue Information" menu to view the contents of the queue.

4. Press <Insert> to display the "Select Directory to Print From" entry box. Change the directory path to the one containing the file you want to print.

5. Press <Enter> to view the "Available Files" list for the directory you have chosen.

6. Select a file from the list. The "Print Job Configurations" list appears. If you defined print job configurations in PRINTCON, they are listed here. If not, only PCONSOLE defaults are listed.

7. Select the print definition. The "New Print Job to be Submitted" form is displayed.

8. Specify the parameters you want, or modify existing parameters. You can modify any field in the "New Print Job to be Submitted" list that you can highlight with the selection bar. Use the arrow keys or the Enter key to move to the field you want to modify.

   Some fields have lists from which you can choose print job configuration parameters. For example, when you are choosing the form name, press <Enter>; a list appears. The list displays the form names you can choose from (these forms are set up in PRINTDEF).

9. After you have modified the print definition, press <Escape> until the "Save Changes" confirmation box appears.

10. Select "Yes" to save your changes. The new print job is added to the print queue and printed according to the configuration you specified.

Print job parameter definitions

You can change or set the following parameters.

Description

You can enter a description of the file you are printing for identification purposes. The default is the filename.

User Hold

You can put your print job on hold. If you do, the file is not printed until you remove the hold. The "User Hold" parameter can be changed by either the owner of the print job (the person who submitted it) or a print queue operator. Type Y for "Yes" to place a hold on the job; type N for "No" to remove the "User Hold" parameter.

Operator Hold

The "Operator Hold" parameter can be changed only by a print queue operator. If the "Operator Hold" parameter is set to "Yes," the job is not printed until the operator resets the parameter to "No."

Server Sequence

If you are a print queue operator, you can change the "Server Sequence" parameter. The service sequence is the position of the print job in the print queue. Print queue operators can place a high-priority job in the first position in the queue and rearrange the order of print jobs.

Number of copies

You can choose the number of copies you want printed.

File contents

You can choose either "Text" (default) or "Byte stream." Choose "Text" when you want tabs to be expanded. Choose "Byte stream" if you are printing a file created with an application, and you want the application to use its formatting commands to print the document.

Tab size

If you chose "Text" (from the "File contents" menu), use the "Tab size" field to specify the number of spaces you want the tabs in your file set to.

Suppress form feed

If you want the printer to advance to the top of the next page after your print job, choose "No." If you don't want the printer to advance to the top of the next page, choose "Yes."

Some applications have a form feed at the end of the file, so adding another causes an extra blank page to be fed through.

Defer printing

If you want the job to be printed as soon as possible, choose "No." If you want to print the job later, choose "Yes." If you choose "Yes," you can enter a target date and time for printing. (See "Target date" and "Target time" on the next page.)

Target server

You can specify which print servers will print jobs in the queue. Specify "(Any Server)" if it doesn't matter which print server prints the job.

Form

You can choose the form number or form name you want the job printed on. (Form names are defined in PRINTDEF.)

Print banner

If you want a banner page printed before the file, choose "Yes." If not, choose "No."

Banner name

If you choose to print a banner page, you can enter text up to 12 characters long in the "Banner name" box. It is printed in the first large print area of the banner. Your username is the default.

Banner file

If you choose to print a banner page, enter any text you want in the "Banner file" box. It is printed in the second large print area of the banner. Your filename is the default.

Target date

Enter the date you want your job printed on. (You can set this option only if you chose "Yes" for "Defer printing.")

Target time

Set the time at which you want your job printed. (You can set this option only if you chose "Yes" for "Defer printing.")

The job entry date and time, print job number, file size, and client name cannot be changed.

Change print job parameters

You can change the parameters of your print job while it is in a print queue. Print queue operators can change anyone's print job parameters. Print job parameters are explained under "Print job parameter definitions" on page 86.

To change print job parameters, complete the following steps.

1. Enter PCONSOLE and select "Print Queue Information" from the "Available Options" menu.
2. Select the print queue whose entries you want to view.
3. Select "Current Print Job Entries" from the "Print Queue Information" menu. The print job entries are displayed.
4. Select the print job entry you want to modify. The "Print Queue Entry Information" form is displayed.
5. Set print job parameters using the arrow keys or the Enter key to highlight entries. Type in new information or choose options from menus.
6. Press <Escape> until you exit the field.

Delete a print job

You can cancel a print job by deleting it from the print queue (even after the job has started printing). You can delete a print job only if you are the owner of the job or if you are a print queue operator.

To delete a print job, complete the following steps.

1. Enter PCONSOLE and select "Print Queue Information" from the "Available Options" menu.
2. Select the print queue whose entries you want to view. The "Print Queue Information" list is displayed.
3. Select "Current Print Job Entries."
4. Highlight the print job entry and press <Delete>.
5. Select "Yes" at the confirmation box.

Change the order of print jobs

To change the order of print jobs, the print queue operator must change the "Server Sequence" number. (See "Server Sequence" on page 87.)

1. Enter PCONSOLE and select "Print Queue Information" from the "Available Options" menu.
2. Select the print queue containing the file whose order in the queue you want to change. The "Print Queue Information" list is displayed.
3. Select "Current Print Job Entries."
4. Select the print job entry you want to move. The "Print Queue Entry Information" list is displayed.
5. Highlight the "Service Sequence" parameter. Type "1" to move the entry to the top of the queue, or type the number of the position you want to place the print job entry in. Press <Escape> twice.

The queue contents are displayed, and the print job entry is in the position you specified.

Place a hold on a print job

Print queue operators can put an "Operator Hold" on a file. The file is not printed until the operator removes the hold. Similarly, users can place a "User Hold" on a file, and the file is not printed until the user or the print queue operator removes the hold.

1. Enter PCONSOLE and select "Print Queue Information" from the "Available Options" menu.
2. Select the print queue in which the print job entry is located to display the "Print Queue Information" list.
3. Select "Current Print Job Entries." The contents of the queue are displayed.
4. Select the print job entry whose printing you want to put on hold. The "Print Queue Entry Information" list appears.
5. Use the arrow keys to highlight the "Operator Hold" or "User Hold" field. Type Y (for "Yes") and press <Enter>.
6. Press <Escape>. If the job is not in the queue, the confirmation box is displayed. If the job is already in the queue, any changes you make are implemented without confirmation.
7. Select "Yes" to save your changes. The status field now displays "Held."

View print queue status

You can view the number of entries in a queue and the number of print servers attached to the queue. If you are a print queue operator, you can also change the operator flags (see page 81).

1. Enter PCONSOLE and select "Print Queue Information" from the "Available Options" menu.
2. Select the print queue whose status you want to view.
3. Select "Current Queue Status" to view the number of entries in the queue, the number of servers attached to the queue, and the operator flag information.

View a print queue's object ID

A print queue's object ID is a number that distinguishes the queue from all other objects (print servers, file servers, other print queues, and so on).

1. Enter PCONSOLE and select "Print Queue Information" from the "Available Options" menu. A list of the defined print queues appears.
2. Select the print queue whose ID number you want to view. The "Print Queue Information" list appears.
3. Select "Print Queue ID" to view the "Print Queue ID" inset.

View the print queue servers

The print queue servers that are allowed to service a selected queue are listed in the "Print Queue Servers" inset. Not all these servers can service the queue, however. A print server cannot service a queue it is not attached to. (See "Authorize a print server to service a queue" on page 81.)

To see the print servers to which a queue is attached, complete the following steps.

1. Enter PCONSOLE and select "Print Queue Information" from the "Available Options" menu.
2. The "Print Queues" list appears. Select the print queue whose print servers you want to view.
3. Select "Queue Servers" from the "Print Queue Information" menu. The "Queue Servers" list appears.

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Create print servers

A print server takes the print jobs from the queue and sends them to the printer. If the print server is servicing queues on multiple file servers, you must create a print server account on each file server.

You can create a print server by completing the following steps.

1. Enter PCONSOLE and select "Print Server Information" from the "Available Options" menu. The "Print Servers" menu is displayed.
2. Press <Insert>. The "New Print Server Name" entry box is displayed.
3. Type the print server name you want and press <Enter>. The new name is added to the menu.

Delete print servers

You can delete a print server by completing the following steps.

1. Enter PCONSOLE and select "Print Server Information" from the "Available Options" menu. The "Print Servers" menu is displayed.
2. Highlight the print server name you want to delete and press <Delete>. The "Delete Print Server" confirmation box is displayed.
3. Select "Yes" to delete the print server name.

Rename print servers

You can rename a print server by completing the following steps.

1. Enter PCONSOLE and select "Print Server Information" from the "Available Options" menu. The "Print Servers" menu is displayed.
2. Press <F3> (the Modify key) to rename the print server. The "Rename Print Server To" entry box is displayed.
3. Type the name you want and press <Enter>.

Select the password for the print server

You can choose whether or not to require a password to bring up the print server. If the print server is servicing queues on multiple file servers, select a password for each file server. To establish or change the password, complete the following steps.

1. Enter PCONSOLE and select "Print Server Information" from the "Available Topics" menu.
2. Select the print server whose password you want to select or change.
3. Select "Change Password" from the "Print Server Information" menu.

4. Type the new password in the "Enter New Password" entry box and press <Enter>.

5. Retype the password in the "Retype New Password" entry box and press <Enter>.

Assign the print server's full name

You can assign a print server's full name by completing the following steps. If the print server is servicing queues on multiple file servers, select a full name for each file server.

1. Enter PCONSOLE and select "Print Server Information" from the "Available Options" menu.

2. Select the print server whose full name you want to view from the "Print Servers" list.

3. Select "Full Name" from the "Print Server Information" list.

4. Add, delete, or change the name in the "Full Name" entry box and press <Enter>.

Attach file servers to a print server

You can assign a file server to a print server by completing the following steps. The attachment will not take effect, however, until the print server is downed and restarted.

1. Enter PCONSOLE and select "Print Server Information" from the "Available Options" menu.

2. Select a print server from the "Print Servers" list.

3. Select "Print Server Configuration" from the "Print Server Information" list.

4. Select "File Servers To Be Serviced" from the "Print Server Configuration" menu.

5. Press <Insert> at the "File Servers To Be Serviced" list to view the available file servers.

6. Select a file server from the "Available File Servers" list.

Attach file servers to a print server (temporary)

You can attach a file server to a print server while the print server is running by completing the following steps. When you down the print server, the attachment is deleted.

1. Enter PCONSOLE and select "Print Server Information" from the "Available Options" menu.
2. Select a print server from the "Print Servers" list.
3. Select "Print Server Status/Control" from the "Print Server Information" menu.
4. Select "File Servers Being Serviced" from the "Print Server Status and Control" menu.
5. Press <Insert> at the "File Servers Being Serviced" list.
6. Select a file server from the "Available File Servers" list.
7. If you are prompted for a password, type the print server's password and press <Enter>.

View the print server's object ID

The print server's object ID is a number that distinguishes the print server from all other objects (file servers, printers, print queues, and so on).

1. Enter PCONSOLE and select "Print Server Information" from the "Available Options" menu. The "Print Servers" list appears.
2. Select the print server whose object ID you want to view. The "Print Server Information" list appears.
3. Select "Print Server ID."

View print server information

Follow these steps to view print server information, including version, type, serial number, and current status. You can also view the number of printers and the queue service modes.

1. Enter PCONSOLE and select "Print Server Information" from the "Available Options" menu.
2. Select a print server from the "Print Servers" list.
3. Select "Print Server Status/Control" from the "Print Server Information" menu.
4. Select "Server Info" from the "Print Server Status and Control" menu.

Down a print server

You can down the print server by completing the following steps.

1. Enter PCONSOLE and select "Print Server Information" from the "Available Options" menu.
2. Select a print server from the "Print Servers" list.
3. Select "Print Server Status/Control" from the "Print Server Information" menu.
4. Select "Server Info" from the "Print Server Status and Control" menu.
5. Press <Enter> at the "Print Server Info/Status" box.
6. Select "Down" to down the server at once.

   Select "Going down after current jobs" to down the server after current jobs are printed.

Add printers to the print server

A print server can service up to 16 printers. If the print server is servicing queues on multiple file servers, you must add the printers on each file server.

You can assign printers to a print server by completing the following steps.

1. Enter PCONSOLE and select "Print Server Information" from the "Available Options" menu.
2. Select a print server from the "Print Servers" list.
3. Select "Print Server Configuration" from the "Print Server Information" list.
4. Select "Printer Configuration" from the "Print Server Configuration" menu.
5. Select a "Not Installed" printer from the "Configured Printers" list.
6. Type a name for the printer or leave the default name.
7. Highlight "Type"; then press <Enter>.
8. Select the type of printer you want from the "Printer types" list.
9. Change other parameters as needed; then press <Escape>. The printer configuration parameters are explained starting on the next page.
10. Select "Yes" from the "Save Changes" box.

The printer configuration parameters are explained starting on the next page.

Printer configuration parameters

Name

You can assign a name to a printer. The name you assign appears on the print server console.

Type

You must select one of the following types of printer connections:

- Local Parallel/Serial. A local printer is connected to the print server.
- Remote Parallel/Serial. A remote printer is connected to a workstation on the network. You must run RPRINTER to use a remote printer (see RPRINTER on page 157).
- Remote Other/Unknown. This option provides the print server information about the printer when you run RPRINTER. This allows you to set up a printing slot for a remote printer without specifying which port the printer is attached to.
- Defined elsewhere. Use this designation when you are defining printers on multiple file servers. You do not need to enter all the printer information on each file server. Enter the connection information on the file server where you originally installed the print server and then select "Defined elsewhere" on all subsequent file servers.

Interrupts

Interrupts are used to signal the processor of some event that needs attention. Most devices in the computer are configured to use a particular interrupt. You should have recorded the interrupts your printing ports use on the Printing Worksheet.

- If you will be using a remote printer, you must select an interrupt.
- If you are using built-in printing ports, check the documentation that came with your computer for the printing port interrupt.

- If you cannot change the configuration of your printing port or if you have used all available interrupts, you can use the "polled" designation. Polled printing does not use interrupts and may be a slower method of sending data to the printer.
- If you use interrupts, you need to select a value for the IRQ.

IRQ

If you choose to use interrupts, you must enter a value that corresponds with your hardware setting. Enter a value between 3 and 7 inclusive that does not conflict with any other settings you have made.

Buffer size in K:

The buffer size is the amount of memory in a printer's buffer. The amount must be between 1 and 20 inclusive. We recommend that you use the default setting of 3KB.

Starting form

Forms (or types of paper used in printing) are defined in PRINTDEF and are assigned a number between 0 and 255. The starting form is the default.

Queue service mode

You can specify how your printer will handle different kinds of forms. You can choose from four service modes:

- Change forms as needed. The printer prints all print jobs in the order they are received, regardless of the form.
- Minimize form changes across queues. The printer prints jobs in the highest priority queue that requires the mounted form. It then searches other queues (in order of priority) for print jobs that require the mounted form.
- Minimize form changes within queues. The printer prints jobs that require the mounted form first.
- Service only currently mounted form. The printer prints only jobs that require the mounted form, beginning with the highest priority queue.

The remaining parameters have to do only with printers that use a serial connection. Be sure to check your printer documentation for specific information regarding these parameters.

Baud rate

Baud rate is the rate at which data travels across the cable or wire. The higher the baud rate for a serial printer, the faster the transmission of data.

Data bits

Data bits specifies the number of bits used to form a character. Choose a value between 5 and 8 inclusive.

Stop bits

A stop bit indicates the end of a character. You can choose a value of 1, 1.5, or 2.

Parity

Parity is a method of error checking. The most common parity values are odd, even, or none.

X-ON/X-OFF

X-ON/X-OFF is one of many methods used to prevent the sending system from transmitting data faster than the receiving system can accept the information. You can use X-ON/X-OFF if your printer supports it.

Remove printers from the print server

You can remove printers from the list of those serviced by a print server.

1. Enter PCONSOLE and select "Print Server Information" from the "Available Options" menu.
2. Select a print server from the "Print Servers" list.
3. Select "Print Server Configuration" from the "Print Server Information" list.
4. Select "Printer Configuration" from the "Print Server Configuration" menu.
5. Highlight the printer in the "Configured Printers" list and press <Delete>.
6. Select "Yes" from the "Delete Printer" box.

Change printer configuration

The printer configuration tells the print server what kind of printer you are using. You can modify the printer configuration by completing the following steps. The changes will not take effect, however, until you down and restart the print server.

1. Enter PCONSOLE and select "Print Server Information" from the "Available Options" menu.
2. Select a print server from the "Print Servers" list.
3. Select "Print Server Configuration" from the "Print Server Information" menu.
4. Select "Printer Configuration" from the "Print Server Configuration" menu.
5. Select a printer from the "Configured Printers" list.
6. Change the printer configuration:
   - Change the printer name by typing a new name and pressing <Enter>.
   - Press <Enter> at the "Type:" space to view the "Printer types" list. Select the appropriate printer type.

- Use the arrow keys to highlight other entry spaces and change parameters as needed. See "Printer configuration parameters" on page 100 for more information.

7. Press <Escape> until the "Save Changes" box appears; select "Yes" to save your changes.

Set the service mode for a printer (temporary)

The service mode determines how a printer handles print jobs. See "Printer configuration parameters" on page 100 for more information about service modes. You can set the service mode temporarily (until you down the print server) by completing the following steps.

1. Enter PCONSOLE and select "Print Server Information" from the "Available Options" menu.
2. Select a print server from the "Print Servers" list.
3. Select "Print Server Status/Control" from the "Print Server Information" menu.
4. Select "Printer Status" from the "Print Server Status and Control" menu.
5. Select a printer from the "Active Printers" list.
6. Use the arrow keys to highlight the "Service mode" selection; then press <Enter>.
7. Select an option from the "Service Mode" menu.

Set mounted form number (temporary)

The mounted form number is used to distinguish the size or type of paper used in printing. See "Starting form" on page 101 for more information on the mounted form number.

You can change the mounted form number temporarily (until you down the print server) by completing the following steps.

1. Enter PCONSOLE and select "Print Server Information" from the "Available Options" menu.
2. Select a print server from the "Print Servers" list.

3. Select "Print Server Status/Control" from the "Print Server Information" menu.
4. Select "Printer Status" from the "Print Server Status and Control" menu.
5. Select a printer from the "Active Printers" list.
6. Use the arrow keys to highlight the "Mounted form" selection; then type a new number. The number must be between 0 and 255.

Control the printer

You can start, stop, rewind, and perform other tasks associated with your printer by completing the following steps. See page 145 in PSC for more information on controlling the printer.

1. Enter PCONSOLE and select "Print Server Information" from the "Available Options" menu.
2. Select a print server from the "Print Servers" list.
3. Select "Print Server Status/Control" from the "Print Server Information" menu.
4. Select "Printer Status" from the "Print Server Status and Control" menu.
5. Select a printer from the "Active Printers" list.
6. Highlight "Printer Control" in the "Status of *Printer*" box; then press <Enter>.
7. Select an option from the printer control menu to control the printer.

Set notify list for printers

You can select users or groups to be notified if a problem occurs with a print job. If the print server is servicing queues on multiple file servers, you must set a notify list for each file server.

1. Enter PCONSOLE and select "Print Server Information" from the "Available Options" menu.
2. Select a print server from the "Print Servers" list.

3. Select "Print Server Configuration" from the "Print Server Information" list.
4. Select "Notify List for Printer" from the "Print Server Configuration" menu.
5. Select a printer from the "Defined Printers" list.
6. Press <Insert> at the notification box to view a list of notification candidates.
7. Select a user or a group from the "Notify Candidates" list.
8. Set the "First" and "Next" intervals in the "Notify Intervals" box; then press <Escape> until the confirmation box appears. (The units for the intervals are seconds.)
9. Select "Yes" at the "Save Changes" box.

Set notify list for printers (temporary)

Complete the following steps to select users or groups temporarily (until you down the print server) to be notified when a problem occurs with a print job. See "Set print job parameters" on page 85 and "Target server" on page 88 to change the default configuration.

1. Enter PCONSOLE and select "Print Server Information" from the "Available Options" menu.
2. Select a print server from the "Print Servers" list.
3. Select "Print Server Status/Control" from the "Print Server Information" menu.
4. Select "Notify List for Printer" from the "Print Server Status and Control" menu.
5. Select a printer from the "Active Printers" list.
6. Press <Insert> at the notification box to view a list of notification candidates.
7. Select a user or a group from the "Notify Candidates" list.

8. You can use the default interval settings, or you can type new settings. (Intervals are set in seconds.) Then press <Escape> until the confirmation box appears.

9. Select "Yes" at the "Save Changes" box.

List printers and queues serviced by a print server

To check which printers and queues are attached to a print server, complete the following steps.

1. Enter PCONSOLE and select "Print Server Information" from the "Available Options" menu.

2. Select the print server you want to check from the "Print Servers" list.

3. Select "Print Server Status/Control" from the "Print Server Information" menu.

4. Select "Queues Serviced by Printer" from the "Print Server Status and Control" menu. The "Active Printers" list appears, displaying all printers attached to the print server.

5. Select a printer to see which (if any) queues it is servicing.

Assign print server operators

Print server operators can perform tasks that regular users cannot. If the print server is servicing queues on multiple file servers, you can assign print server operators on each file server. Assign users or groups as print server operators by completing the following steps.

1. Enter PCONSOLE and select "Print Server Information" from the "Available Options" menu.

2. Select a print server from the "Print Servers" list.

3. Select "Print Server Operators" from the "Print Server Information" menu.

4. Press <Insert> when the "Print Server Operators" list appears.

5. Select a user or group name from the "Print Server Operator Candidates" list to assign that user or group as a print server operator.

Remove print server operators

You can remove users or groups from the list of print server operators by completing the following steps.

1. Enter PCONSOLE and select "Print Server Information" from the "Available Options" menu.
2. Select a print server from the "Print Servers" list.
3. Select "Print Server Operators" from the "Print Server Information" menu.
4. Highlight a user or group name in the "Print Server Operators" list; then press <Delete>.
5. Select "Yes" from the "Delete Print Server Operator" box.

Assign print server users

You can assign users or groups as print server users by completing the following steps. If a print server is servicing queues on multiple file servers, you must assign print server users on each file server.

1. Enter PCONSOLE and select "Print Server Information" from the "Available Options" menu.
2. Select a server from the "Print Servers" list.
3. Select "Print Server Users" from the "Print Server Information" menu.
4. Press <Insert> at the "Server Users" box.
5. Select a user or a group from the "Print Server User Candidates" list.

Remove print server users

You can remove users or groups from the list of print server users by completing the following steps.

1. Enter PCONSOLE and select "Print Server Information" from the "Available Options" menu.
2. Select a server from the "Print Servers" list.
3. Select "Print Server Users" from the "Print Server Information" menu.
4. Highlight a user or a group in the "Server Users" list; then press <Delete>.
5. Select "Yes" from the "Delete Print Server User" box.

Assign queues to printers

When you print a file, the print job is sent to a queue, which then sends it to a specified printer. If the print server is servicing queues on multiple file servers, you must assign queues to printers on each file server. You can assign queues to a printer by completing the following steps.

1. Enter PCONSOLE and select "Print Server Information" from the "Available Options" menu.
2. Select a print server from the "Print Servers" list.
3. Select "Print Server Configuration" from the "Print Server Information" menu.
4. Select "Queues Serviced by Printer" from the "Print Server Configuration" menu.
5. Select a printer from the "Defined Printers" list.
6. Press <Insert> at the "File Server/Queue/Priority" box.

7. Select a queue from the "Available Queues" list.

8. Press <Enter> at the "Priority" entry box to leave the priority setting at 1.

   To change the priority setting, use the Backspace key to delete the previous setting. Then type a new number and press <Enter>. You can have a priority from 1 to 10, with 1 being the first queue serviced.

   To access the "Priority" entry box again, press <Enter> at the "File Server/Queue/Priority" box.

Assign queues to printers (temporary)

You can assign queues to a printer temporarily (until you down the print server) by completing the following steps. See "Set print job parameters" on page 85 and "Target server" on page 88 to change the default configuration.

1. Enter PCONSOLE and select "Print Server Information" from the "Available Options" menu.

2. Select a server from the "Print Servers" list.

3. Select "Print Server Status/Control" from the "Print Server Information" menu.

4. Select "Queues Serviced by Printer" from the "Print Server Status and Control" menu.

5. Select a printer from the "Active Printers" list.

6. Press <Insert> at the "File Server/Queue/Priority" box to view a list of available queues.

7. Select a queue from the "Available Queues" list.

8. The default priority is 1. To change the priority, press <Backspace> and type a new number; then press <Enter>.

Remove queues from printers

You can remove a queue from the list of those serviced by a particular printer. Complete the following steps.

1. Enter PCONSOLE and select "Print Server Information" from the "Available Options" menu.

2. Select a print server from the "Print Servers" list.
3. Select "Print Server Configuration" from the "Print Server Information" menu.
4. Select "Queues Serviced by Printer" from the "Print Server Configuration" menu.
5. Select a printer from the "Defined Printers" list.
6. Highlight the appropriate file server and queue in the "File Server/Queue/Priority" list, and press <Delete>.
7. Select "Yes" from the "Delete Queue From Service List" box.

Remove queues from printers (temporary)

You can temporarily (until you down the print server) remove a queue from the list of those serviced by a printer. See "Set print job parameters" on page 85 and "Target server" on page 88 to change the default configuration.

1. Enter PCONSOLE and select "Print Server Information" from the "Available Options" menu.
2. Select a print server from the "Print Servers" list.
3. Select "Print Server Status/Control" from the "Print Server Information" menu.
4. Select "Queues Serviced by Printer" from the "Print Server Status and Control" menu.
5. Select a printer from the "Active Printers" list.
6. Delete file server and queue from the "File Server/Queue/Priority" box.
7. Select "Yes" at the "Delete Queue From Service List" box.

Notes

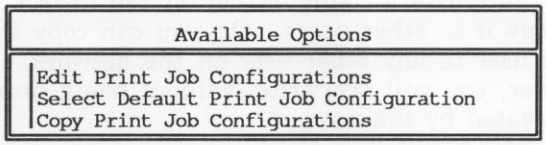
PRINTCON

PRINT Job **CON**figuration

Why use PRINTCON?

Use PRINTCON to define your preferred print options and to set them up as standard configurations. In other words, PRINTCON serves as a database for printing with CAPTURE, NPRINT, and PCONSOLE.

The printing tasks are organized according to PRINTCON's "Available Options" menu.



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Additional information

If you never use CAPTURE, NPRINT, or PCONSOLE, you do not need PRINTCON. If, however, your application is not designed for network printing, you may want to use PRINTCON to set up some general types of print formats.

PRINTCON creates a file, PRINT.DAT, in each user's MAIL ID directory. Since users have Write and Create rights in their ID directory, they can create and modify their own print jobs.

As Supervisor, you can create a configuration (stored in the Supervisor MAIL ID directory) and copy it to other users. Or, you can copy the print job configuration of one user to any other user on the network. When you copy a configuration, however, you will overwrite (without being prompted) the print job configurations created by the user.

If you use PRINTCON, you should use PRINTDEF first to set up a database of printer definitions. PRINTDEF defines which printers and forms are available on your file server.

You can use PRINTDEF to define your own codes and to select other fonts. See PRINTDEF for more details about the NetWare-supplied printer definition files.

Create a print job configuration

Network users can set up their own configurations. The first configuration you create becomes your default. When you define other configurations, you can decide which configuration will be your default (see page 120).

The default configuration will be used if you don't specify any options when using CAPTURE, NPRINT, or PCONSOLE. You can, however, override the default configuration by specifying a different job configuration when using CAPTURE, NPRINT, or PCONSOLE.

To create a print job configuration, complete the following steps.

1. Enter PRINTCON and select "Edit Print Job Configurations" from the "Available Options" menu.

2. Press <Insert> from the "Print Job Configurations" list.

3. Type the name (up to 31 characters) of the configuration you want to create in the "Enter New Name" entry box and press <Enter>.

4. Use the arrow keys to highlight the item you want to modify in the "Edit Print Job Configuration" form.

   Make the change by typing a new value and pressing <Enter> or by selecting an item from the menu provided.

   The configuration parameters are explained below.
5. Once you have set up your configuration, press <Escape>.
6. In the "Save Changes" confirmation box, select "Yes."

Print job configuration parameters

The following parameters can be set or changed.

Number of copies

Type a number from 1 to 65,000

Default: 1

File contents

Press <Enter> to see your two choices: "Text" and "Byte stream."

Choose "Text" when you want tabs to be converted to spaces. (Choose "Text" to print ASCII text.)

Choose "Byte stream" if you are printing from within an application and you want the application to handle the formatting commands. If you will be downloading fonts on a laser printer, choose "Byte stream."

Default: Byte stream

Tab size

This parameter applies only if you choose "Text" as the "File contents" setting. Type a number from 1 to 18. The number of spaces you specify replaces all tab characters in your print job. If "File contents" is set to "Byte stream," this field is blank.

Default: 8

Suppress form feed

Type Y for "Yes" or N for "No."

Choose "No" if you want the printer to advance to the top of the next page after your print job.

Choose "Yes" if you don't want the printer to advance to the top of the next page. Some applications already have a form feed at the end of the file, so setting this parameter causes an extra blank page to be fed through.

Default: No

Notify when done

Type Y for "Yes" or N for "No." If you choose "Yes," you will be notified that your data has been printed. A message appears across the bottom of your screen:

```
Jobname printed on Printername.
```

Default: no notification

Form name

Press <Enter> to see a menu of forms you can choose from. You define forms in the PRINTDEF database and describe the form (type of paper) your document will be printed on.

If no forms have been defined in PRINTDEF, you can't change the form name. Form names are tied to the file server they were created on. If you change the file server option, you may have to change this option as well.

Print banner

Answer Y for "Yes" or N for "No." Choose "Yes" if you want a banner to be printed before the file is printed.

Default: Yes

Name

If you print a banner, you can specify the text that appears on the upper part of the banner page. You can use the default banner name, or you can type any text, up to 12 characters long.

Default: your username

Banner name

If you print a banner, you can specify the text that appears on the lower part of the banner page. You can use the default banner name, or you can type any text, up to 12 characters long.

Default: name of file you are printing

Local printer

This parameter is used only with CAPTURE. You can specify which local parallel printer port (LPT1, LPT2, or LPT3) you want the command to affect.

Default: LPT1

Auto endcap

This parameter is used only with CAPTURE. Type Y for "Yes" or N for "No."

Choose "Yes" if you want the captured data to be printed when you exit an application or when the application closes the print device.

Choose "No" if you don't want the captured data to be printed until you enable timeout or you run ENDCAP.

Default: Yes

Enable timeout

This parameter is used only with CAPTURE. Type Y for "Yes" or N for "No."

Choose "Yes" if you want the captured data to be sent to the queue after the number of seconds you define as the "Timeout count" has elapsed since receiving data.

Choose "No" if you want the captured data to be sent to the queue when you run ENDCAP.

Default: No

Timeout count

If you enable timeout, you can type a number from 1 to 1,000. The number represents how many seconds elapse between the time the print job stops sending data and the data is actually sent to the queue. If you will be printing documents that require extensive calculation, such as graphics, set this number above 20.

Default: 5

File server

Press <Enter> to see a list of the file servers you can use. Select the file server you want to print from. If no forms have been defined for the server you choose, you must choose another server. Changing the file server may require changing the print queue, form names, and device modes.

Print queue

Press <Enter> to see a list of the print queues you can use. Select the print queue on the file server the print job should be sent to.

Print server

Press <Enter> to see a list of the print servers that are authorized to service jobs in the print queue you chose. Select the print server you want to use. CAPTURE does not support print server names.

Device

Press <Enter> to see a list of the print devices defined in PRINTDEF (printers and plotters) you can use. Select the device on which you want to print. (The device should match the queue you chose.)

Mode

Press <Enter> to see a list of the modes for the print device you chose. A *mode*, defined in PRINTDEF, is a special type of printing, such as 15 characters per inch (compressed mode). Select the mode you want to use.

Delete a print job configuration

1. Enter PRINTCON and select "Edit Print Job Configurations" from the "Available Options" menu.
2. Delete the configuration from the "Print Job Configurations" list.

   You cannot delete the default configuration. (See "Select the default print job configuration" on page 120.)
3. Select "Yes" in the "Delete Current Print Job Configuration" confirmation box.

Rename a print job configuration

1. Enter PRINTCON and select "Edit Print Job Configurations" from the "Available Options" menu.
2. Highlight the configuration you want to rename in the "Print Job Configurations" list, and press <F3> (the Modify key).
3. Type the new name in the "Change Name To" entry box, and then press <Enter>.

Edit a print job configuration

1. Enter PRINTCON and select "Edit Print Job Configurations" from the "Available Options" menu.
2. Select the configuration you want to edit from the "Print Job Configurations" list.
3. Use the arrow keys to highlight the item you want to edit in the "Edit Print Job Configuration" table. Then make the change by typing a new value and pressing <Enter> or by selecting an item from the list provided.

   The configuration parameters are explained beginning on page 115.
4. When you are ready to save the changes you have made, press <Escape>.
5. Select "Yes" in the "Save Changes" confirmation box.

Select the default print job configuration

The first configuration you create becomes your default. When you create other configurations, you can select which will be your default.

The default configuration you choose determines the default settings for files you print with PCONSOLE, NPRINT, and CAPTURE. However, if you specify any options when using NPRINT or CAPTURE to print, the options will override the default settings in PRINTCON.

1. Enter PRINTCON and select "Select Default Print Job Configuration" from the "Available Options" menu.
2. Select the configuration you want to be the default from the "Select Default Print Job Configuration" list.

   The word *default* appears in the right column of the "Select Print Job Configurations" list, indicating your new default configuration.

Copy print job configurations from one user to another

As network supervisor or workgroup manager, you can copy print job configurations from one network user to another. Each user has a print job configuration file that stores any print job configurations created by or for that user.

You cannot copy a single job configuration at a time; you must copy the whole file. When you copy one user's print job configuration file to another user, the copied file overwrites the target user's existing file.

Since users can create their own print job configurations, you should check with them before copying over their existing files.

If you have made any changes to the job configurations, exit PRINTCON to save the changes before copying the definitions to another user.

To copy a print job configuration, complete the following steps.

1. Enter PRINTCON and select "Copy Print Job Configurations" from the "Available Options" menu.

2. Type the name of the user whose configuration file you want to copy in the "Source User" entry box, and press <Enter>.

3. In the "Target User" entry box, type the name of the user whose configuration file you want to create or replace, and press <Enter>.

   The file is copied. The target user now has a copy of all the source user's configurations.

Notes

PRINTDEF

PRINTer DEFinition

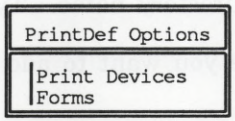
Why use PRINTDEF?

Use PRINTDEF to set up a database of printer definitions. You can define a device driver for network printers, plotters, and other devices. You can also define the forms (types of paper) that the print devices will use.

The information defined in PRINTDEF will then be used by PRINTCON. NPRINT, CAPTURE, and PCONSOLE can use the device driver via PRINTCON.

Network users can use PRINTDEF to view the device functions, modes, and forms that you set up.

The tasks are organized according to the "PrintDef Options" menu.



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Copy print device definitions provided with NetWare

To use any of the NetWare print device definitions, copy them from the SYS:PUBLIC directory to the PRINTDEF database for your file server.

The print device definitions are files that have a .PDF extension. The files are listed on page 125.

To copy any of the NetWare definitions, log in as SUPERVISOR and complete the following steps.

1. Enter PRINTDEF and select "Print Devices" from the "PrintDef Options" menu.
2. Select "Import Print Device" from the "Print Device Options" menu.
3. If you are not in the SYS:PUBLIC directory, use the Backspace key to erase the current directory name. Type SYS:PUBLIC and press <Enter>.
4. Select the .PDF file you want to add to your database from the "Available .PDFs" list.

   If you try to copy a file that has the same name as an existing print device definition, the "New Device Name" entry box appears, prompting you to rename the new print device definition. Type the revised name and press <Enter>.

   The new print device definition is added to the print definition database. You are returned to the "Print Device Options" menu.
5. To save the database with the new print device definition, press <Escape> twice.
6. Select "Yes" in the "Exit PrintDef" confirmation box. Then select "Save Data Base, then EXIT."

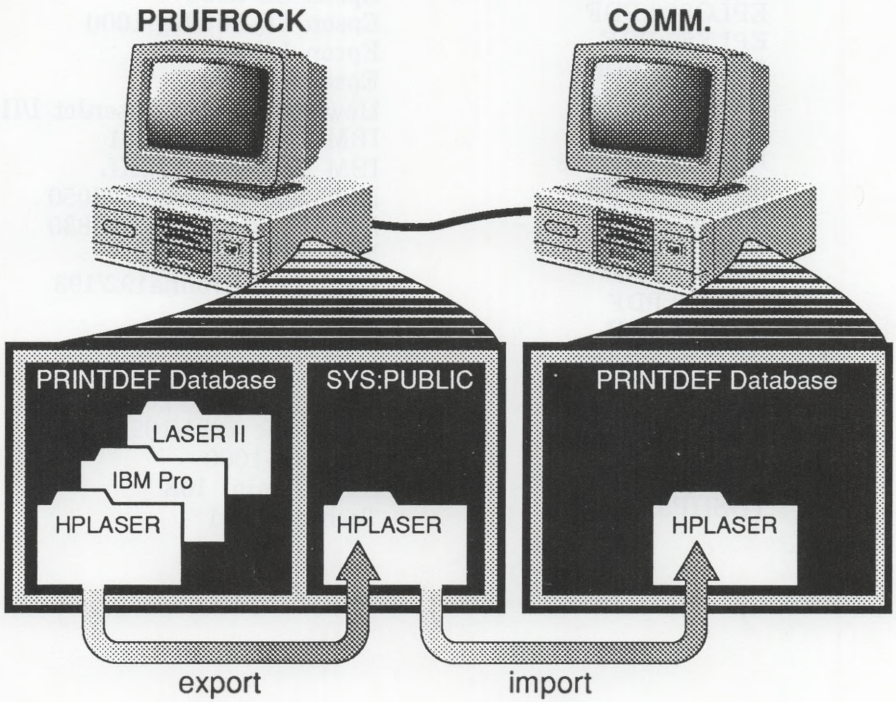
NetWare print device definitions

Filename	Printer name
APPIMAGE.PDF	Apple Imagewriter II
APPLASER.PDF	Apple Laserwriter I/Plus
CIT120D.PDF	Citizen 120-D
CIT20.PDF	Citizen 20
CIT224.PDF	Citizen 224
CITOH310.PDF	CItoh 310/315
CITOH600.PDF	CItoh 600
DIAB630.PDF	Diablo 630
EPEX800.PDF	Epson EX-800
EPEX80.PDF	Epson FX80/FX100
EPEX86.PDF	Epson FX86e/FX286e
EPLD2500.PDF	Epson LD-2500
EPLQ800.PDF	Epson LQ-800/LQ-1000
EPLX80.PDF	Epson LX-80
EPLX800.PDF	Epson LX-800
HPLASER.PDF	Hewlett-Packard LaserJet I/II
IBM4201.PDF	IBM ProPrinter 4201
IBMPRO2.PDF	IBM ProPrinter II/XL
NEC2050.PDF	NEC Spinwriter2050/3050
NEC8810.PDF	NEC Spinwriter8810/8830
NECP6.PDF	NEC Pinwriter P-6
OKI192.PDF	Okidata Microline192/193
OKI290.PDF	Okidata 290
OKI390.PDF	Okidata 390
OKILASER.PDF	Okidata Laserline 6
PAN1080.PDF	Panasonic 1080/1080i
PAN1091.PDF	Panasonic 1091/1091i
STAR1000.PDF	Star NX-1000
STAR10X.PDF	Star Gemini 10X
TOSHP321.PDF	Toshiba P321

Copy print device definitions from another file server

If you want to use another file server's printer, you must first export the print device definition from the original server's NET$PRN.DAT file into a .PDF (Print Definition) file. You can then import the .PDF file to your server's NET$PRN.DAT file (located in SYS:PUBLIC). You can copy only one device definition at a time. You must have supervisor privileges on both file servers (or the supervisor of the other server will need to help you).

The figure below illustrates the steps in copying a print device definition. The example shows how to copy the HP LaserJet print device definition from file server PRUFROCK to file server COMM. First, export the HPLASER.PDF file from the PRINTDEF database on PRUFROCK to the SYS:PUBLIC directory on PRUFROCK. Then import the HPLASER.PDF file from the SYS:PUBLIC directory on PRUFROCK to the PRINTDEF database on COMM.



Copying print device definitions

Export print device definitions

You can export a device definition to your current directory, to another directory on the current file server, or to a directory on another file server. Decide where you want to export the device definition, and complete one of the following sections.

Export to current directory

1. Enter PRINTDEF and select "Print Devices" from the "PrintDef Options" menu.
2. Select "Export Print Device" from the "Print Device Options" menu.
3. Select the device definition you want to copy to another file server from the "Defined Print Devices" list. Your current directory is listed in the "Destination Directory" entry box.
4. Press <Enter>.
5. Type the name you want to give the file in the "Export File Name" entry box, and press <Enter>.

   The name can be up to eight characters long but cannot include an extension. You will probably want to use the name of the print device so the file is easily recognizable (for example, HP_LASER).

   The file is created with a .PDF extension and is placed in the specified directory.
6. Press <Escape> to return to the "Print Device Options" menu.

Export to another directory

You can also export the .PDF to another directory on the current file server. We suggest putting the file in the SYS:PUBLIC directory of the current file server so the supervisor of another file server can log in as GUEST and have sufficient rights to import the file.

1. Enter PRINTDEF and select "Print Devices" from the "PrintDef Options" menu.
2. Select "Export Print Device" from the "Print Device Options" menu.

3. Select the device definition you want to copy to another directory from the "Defined Print Devices" list.

   If you want to use your current directory, skip to Step 7.

4. Use the Backspace key to erase the current directory listed in the "Destination Directory" entry box.

5. Press <Insert> to see a list of directories on the current file server. Select the directory path you want.

6. When you have selected the complete directory path, press <Escape> and then <Enter>.

7. Type the name you want to give the file in the "Export File Name" entry box, and press <Enter>.

   The name can be up to eight characters long but cannot include an extension. You will probably want to use the name of the print device so the file is easily recognizable (for example, HP_LASER).

   The file is created with a .PDF extension and is placed in the specified directory.

8. Press <Escape> to return to the "Print Device Options" menu.

Export to another file server

If you want to export the file to another file server, you must have Write and Create rights on the other file server, or you will be unable to copy the file.

1. Enter PRINTDEF and select "Print Devices" from the "PrintDef Options" menu.

2. Select "Export Print Device" from the "Print Device Options" menu.

3. Select the device definition you want to copy to another file server from the "Defined Print Devices" list.

4. Use the Backspace key to erase the complete directory path listed in the "Destination Directory" entry box.

5. Press <Insert> twice to see a list of attached file servers.

6. Select the file server you want to export the file to.

7. If you are not already attached to the destination file server, a box appears, prompting you for your login name and password. Type your username and press <Enter>. Then type your password and press <Enter>.

8. Select a file server from the "File Server/Local Drives" list. Do not select a local drive that doesn't exist.

9. A box appears listing the volumes of the destination file server. Select the volume and continue selecting directories to complete the desired path.

10. When you have selected the complete directory path, press <Escape> and then <Enter>.

11. Type the name you want to give the file in the "Export File Name" box, and press <Enter>.

    The name can be up to eight characters long but cannot include an extension. You will probably want to use the name of the print device so the file is easily recognizable (for example, HP_LASER).

    The file is created with a .PDF extension and is placed in the specified directory.

12. Press <Escape> to return to the "Print Device Options" menu.

Import print device definitions

If you created your own .PDF files, you must import them into the PRINTDEF database file, NET$PRN.DEF, on the desired file server. You can also import files created on other file servers.

You can import .PDF files to your current directory, another directory, or an attached file server. Decide where you want to import the file, and complete one of the following sections.

Import from the current directory

1. Enter PRINTDEF and select "Print Devices" from the "PrintDef Options" menu.

2. Select "Import Print Device" from the "Print Device Options" menu.

   The "Source Directory" entry box displays your current directory.

3. Press <Enter>.

4. Select the .PDF file you want to add to your database from the "Available .PDFs" list.

   If the supervisor of another file server exported the file, you will need to get the filename from that supervisor.

   If you try to import a file that has the same name as an existing print device definition, the "New Device Name" box appears, prompting you to rename the new print device definition. Type the revised name and press <Enter>.

   The new print device definition is added to the print definition database. You return to the "Print Device Options" menu.

5. To save the database with the new print device definition, press <Escape> twice.

6. Select "Yes" in the "Exit PrintDef" confirmation box. Then select "Save Data Base, then EXIT."

Import from another directory

If the .PDF file is located in another directory on your current file server, complete the following steps.

1. Enter PRINTDEF and select "Print Devices" from the "PrintDef Options" menu.

2. Select "Import Print Device" from the "Print Device Options" menu.

   The "Source Directory" entry box displays your current directory.

3. Use the Backspace key to erase the current directory.

4. Press <Insert> to see a list of available directories.

5. Select the name of the directory you want to copy the .PDF (Print Definition) file from.

6. Select the .PDF file you want to add to your database from the "Available .PDFs" list. If the supervisor of another file server exported the file, you should get the filename from that supervisor.

   If you try to import a file that has the same name as an existing print device definition, the "New Device Name" box appears, prompting you to rename the new print device definition. Type the revised name and press <Enter>.

   The new print device definition is added to the print definition database. You return to the "Print Device Options" menu.

7. To save the database with the new print device definition, press <Escape> twice.

8. Select "Yes" in the "Exit PrintDef" confirmation box. Then select "Save Data Base, then EXIT."

Import from an attached file server

If the .PDF is located on another file server, complete the following steps.

1. Enter PRINTDEF and select "Print Devices" from the "PrintDef Options" menu.

2. Select "Import Print Device" from the "Print Device Options" menu.

   The "Source Directory" entry box displays your current directory.

   If the file has been placed in the SYS:PUBLIC directory, you should have sufficient rights (Read, File Scan) in that directory.

3. Use the Backspace key to erase the complete directory path.

4. Press <Insert> to see a list of attached file servers.

   If the .PDF file is located on a file server you are not currently attached to, press <Insert> again. Select the server you want to attach to from the "Other File Servers" list. A box appears prompting you for your login name and password. Enter your login name and password.

5. Select the file server you want to import the file from.

6. A box appears listing the volumes of the source file server. Select the one you want.

7. Select the appropriate directory from the list of available directories.

8. When you have selected the complete directory path, press <Escape> and then <Enter>.

9. Select the .PDF file you want to add to your database from the "Available .PDFs" list. If the supervisor of another file server exported the file, you should get the filename from that supervisor.

   If you try to import a file that has the same name as an existing print device definition, the "New Device Name" entry box appears, prompting you to rename the new print device definition. Type in the revised name and press <Enter>.

   The new print device definition is added to the print definition database. You return to the "Print Device Options" menu.

10. To save the database with the new print device definition, press <Escape> twice.

11. Select "Yes" from the "Exit PrintDef" confirmation box. Then select "Save Data Base, then EXIT."

Define print device functions

If your print devices (printers, plotters, etc.) are not included among the definitions provided with NetWare (see page 125), you need to define your own print device functions and print device modes for each device you will be using.

Print functions (also referred to as escape sequences or printer commands) give instructions to the printer. You will use these functions to create print device modes (see page 135). To define a printer's functions, you enter escape sequences or printer commands into the PRINTDEF database. To do this, you need the technical reference manual that came with your printer.

Enter a device function

As a network supervisor, you can define a printer's functions by completing the following steps.

1. Enter PRINTDEF and select "Print Devices" from the "PrintDef Options" menu.

2. Select "Edit Print Devices" from the "Print Device Options" menu.

3. Press <Insert> from the "Defined Print Devices" list.

4. Type the name of the print device in the "New Device Name" entry box, and press <Enter>. The name should be recognizable to users (for example, a brand name such as IBM ProPrinter), and it cannot be more than 32 characters in length.

   The name of the print device you just typed is highlighted.

5. Press <Enter>.

6. Select "Device Functions" from the "Edit Device Options" menu.

   The "*Device* Functions" list is displayed. (The name of your print device replaces *device*.)

7. Enter the escape sequences or printer commands for the specified printer as explained in the next section. The documentation that came with the printer will probably have a chapter or section explaining printer commands. Consult that documentation. You can press <F1> for Help as well.

8. Press <Insert>. This will allow you to add a new print function.

9. Type a name to identify the printer command in the "Function Definition Form" entry box, and press <Enter>.

   ❖ *Example:* You are defining the HP LaserJet, and you want to include the print function for resetting the printer. Type

   Reset <Enter>

   The "Escape Sequence" option is highlighted.

10. Type in the actual escape sequence supplied by the device documentation, and press <Enter>. When you enter the escape sequences, you must type each character, including the angle brackets < >. The escape sequence must be entered in a manner that NetWare recognizes. Press <F1> for Help.

    ❖ *Example:* To enter the HP LaserJet print function for reset, you would type

    <ESC>E <Enter>

11. Press <Escape> and then <Enter> to save and insert the new escape sequence into the "Functions" list.

When you enter the print functions, be sure to include the reset escape sequence.

12. Repeat Steps 1 through 4 for each function or escape sequence you want to enter.

13. If you want to edit any of the device functions, use the Backspace key to erase the current information and type in the new name or escape sequence. Press <Escape> and then <Enter> to save the modified function.

14. After you have entered all the device functions, press <Escape> to return to the "Edit Device Options" menu.

Note: Because NetWare can place the functions only at the beginning or end of a print job, the best functions to use are those that affect the entire document (such as Condensed or Landscape).

Define print device modes

After you define the functions for a print device, you can combine these functions into modes. A mode is a sequence of print functions that tells the printer how to print a particular job.

For example, you could create a Final Print Out mode for the HP LaserJet that would include the functions for 10 cpi, Emphasized printing, and Near-letter quality printing.

As a network supervisor, you must determine what your printing needs are and then define the modes by completing the following steps.

15. Select "Device Modes" from the "Edit Device Options" menu.

The "(Re-initialize)" mode appears in the "*your printer* Modes" entry box. (*Your printer* is replaced with the name of the printer you have selected.)

The "(Re-initialize)" mode contains the functions that are appended to the end of a print job. It is the only mode that does this.

16. To set up the "(Re-initialize mode)," press <Enter>.

17. Press <Insert> to see a list of all defined functions for one print device. Most print devices have a single escape sequence for reset. Select the function or escape sequence for resetting the printer.

❖ *Example:* To define the Re-initialize mode for the HP LaserJet, select the following escape sequence:

Reset <ESC>e

If your printer does not have a single reset function, you must enter all your printer's "Cancel" functions into the Re-initialize mode. Mark multiple functions by highlighting each and pressing <F5> (the Mark key).

Create additional print device modes

After you have entered the Re-initialize mode functions, you can create additional modes depending on your printing needs.

1. Press <Insert> in the "*your printer* Modes" list (*Your printer* is replaced by whatever printer you are defining, for example, HP LaserJet Modes.)

2. Type the name of the mode you want to create (for example, Final Printout) in the "New Mode Name" entry box, and press <Enter>.

3. Enter the functions for that particular mode in the "*New Mode Name* Functions" list. (*New Mode Name* is replaced by the name of the mode you are defining.)

   The order of the functions in the functions list may be important to the printer. Normally, any function you add will be placed at the end of the list. However, you can insert a new function anywhere in the "*New Mode Name* Functions" list by highlighting the function preceding the line where you want the new function added. Then press <F5> (the Mark key). Now insert the new functions by completing Steps 4 and 5.

4. Press <Insert> to see the list of all defined functions for that print device.

5. Use <F5> (the Mark key) to highlight the functions you want to include in the new mode.

   The functions you choose appear in the "*New Mode* Name Functions" list.

   - *Example:* If you want to create a Final Printout mode for the HP LaserJet and you want to include 10 cpi, Emphasized printing, and Near-letter quality printing, highlight and mark each of these options. Then press <Enter>.

   When you have completed the "Functions" list, press <Escape> to return to the "Modes" list.

6. To delete a function from the modes list, highlight that function and press <Delete>

7. Repeat Steps 1 through 5 for each mode or combination of functions you want to create.

8. When you are finished entering modes for one print device, press <Escape> to return to the "Defined Print Devices" list.

9. To exit PRINTDEF after you have finished defining all print modes, press <Escape> until you come to the "PrintDef Options" menu. Select "Exit Options." Then select "Save Data Base, then EXIT."

List the defined print devices on your network

1. Enter PRINTDEF.

2. Select "Print Devices" from the "PrintDef Options" menu. A list of the defined print devices appears. If the "Defined Print Devices" list is empty, none have been defined.

View device functions

A *device function* is an escape sequence (a string of control code characters) that controls a printing characteristic.

To view the functions and escape sequences for a defined print device, complete the following steps.

1. Enter PRINTDEF and select "Print Devices" from the "PrintDef Options" menu.

2. Select the print device whose device functions you want to view from the "Print Device Options" menu.

3. Select "Device Functions" from the "Edit Device Options" menu. The functions and corresponding escape sequences that have been defined for the selected print device appear.

   If the escape sequence for a function is too long to be displayed in the "Printer Functions" list (longer than 32 characters), select that escape sequence and press <Enter>. The escape sequence is displayed in the "Escape Sequence or Function" entry box.

You can also view functions and escape sequences individually by following these steps:

1. Enter PRINTDEF and select "Print Devices" from the "PrintDef Options" menu.
2. Select the print device that contains the functions you want to view from the "Print Device Options" menu.
3. Select "Device Modes" from the "Edit Device Options" menu. A list of the modes that have been defined for the selected print device is displayed.
4. Select the mode whose functions you want to view. The mode's functions are listed.
5. Select a function whose escape sequence you want to view.

View device modes

If one or more print devices have been defined, you can view their associated device modes by following these steps.

1. Enter PRINTDEF and select "Print Devices" from the "PrintDef Options" menu.
2. Select the print device whose defined modes you want to view from the "Print Device Options" menu.
3. Select "Device Modes" from the "Edit Device Options" menu. The modes that have been defined for the selected print device are displayed.

Define print forms

Print forms are the type of paper you will print on. The print forms you define will be used as you set up print job configurations. For example, you might want some jobs to be printed on letter-size sheets of paper and others on green-bar continuous-feed paper.

The print server recognizes forms by name and number. If you send a print request that requires a specific form, the print server will not print the job until that form is mounted in the printer.

As a network supervisor, you can define print forms by following these steps.

1. Enter PRINTDEF and select "Forms" from the "PrintDef Options" menu.

   A list of the forms that have been defined for printing is displayed.

2. Press <Insert>.

3. Type the name of the new form you want to define in the "Forms Definition Form" entry box, and press <Enter>.

   The first character of the form name must be alphabetic, and the form name cannot exceed 12 characters. Examples of form names include White_8x11, Continuous, Checks, Green_Bar, Standard.

4. Type the number you want to assign to the form and press <Enter>. You will probably want to assign the most commonly used form as form 0, since 0 is the default form. Form numbers must fall between 0 and 255.

5. Type the length of the form in lines per page and press <Enter>. The number must fall between 1 and 255. This number is for your reference only. Use a number that makes sense to you. For example, if your printer is set to 6 lines per inch and your paper measures 8.5 by 11 inches, you might select 66.

6. Type the width of the form in characters per line, and press <Enter>. The number must fall between 1 and 999. This number is for your reference only. Use a number that makes sense to you. For example, if your printer is set to 10 characters per inch and your paper measures 8.5 by 11 inches, you might select 85.

7. To save changes, press <Escape>. Select "Yes" in the "Save Changes" confirmation box. The new form is listed in the "Forms" list.

8. Repeat Steps 2 through 7 for each form you want to define.

9. If you need to edit a form, highlight it in the "Forms" list and press <Enter>. Follow Steps 3 through 7 to make any necessary changes.

10. To delete a form from the "Forms" list, highlight that form and press <Delete>. Press <Enter> to confirm your decision to delete the form.

11. To exit PRINTDEF after you have defined forms, press <Escape> twice and then <Enter> to access the "Exit Options" menu. Select "Save Data Base, then EXIT."

View a list of forms

To see which forms have been defined for your print devices, complete the following steps.

1. Enter PRINTDEF.
2. Select "Forms" from the "PrintDef Options" menu. A list of the forms that have been defined for printing is displayed.

View form definitions

To see what parameters have been set for a specified form, complete the following steps.

1. Enter PRINTDEF.
2. Select "Forms" from the "PrintDef Options" menu. A list of the forms that have been defined for printing is displayed.
3. Select the form whose definition you want to view.

   The "Forms Definition Form" is displayed. It contains the form's name, the number you assigned to it, and the form's length and width. Forms can be referred to by their number or name; however, it is usually easier to remember a form by a descriptive name rather than by an arbitrary number.

PSC

Print Server Command

Why use PSC?

Print server operators can use PSC to quickly control print servers and network printers. (They can use PCONSOLE to perform most of the same tasks.)

Network users can use PSC to see the status of print servers and network printers.

Command format

PSC [PS=*printserver*] [P=*printernumber*] *flaglist*

Replace *printserver* with the name of the print server.

Replace *printernumber* with the number of the printer. Printer numbers are defined in PCONSOLE when you set up the configuration files for the print server.

To set defaults for the print server name and the printer number, see "Additional information" on page 144.

Replace *flaglist* with one of the flags listed below. Print server operators can use any of the flags. Network users can use only the STATus flag.

STATus	**F**orm**F**eed
PAUse	**MO**unt Form=*n*
ABort	**PRI**vate
STOp [*Keep*]	**SH**ared
STARt	**C**ancel**D**own
Mark [*character*]	

An explanation of the flags begins on the next page.

Flaglist

STATus

Include this flag to see the status of one or all of the printers installed on the specified print server. If you specify a printer number, you will see the status of that printer only.

If you do not include a printer number (P=*n*), you will see the status of all printers installed on the specified print server. However, if you have set a default printer number using the DOS SET command (see page 144), you need to type P=all to see the status of all printers.

Following are the possible status messages:

Waiting for job	Mark/Form feed
Mount form *n*	Not connected
Printing job	Not installed
Paused	In private mode
Ready to go down	Off line
Stopped	Out of paper

Not connected means a configuration file for a remote printer exists but has not been connected to the print server. Use RPRINTER to connect a remote printer to the print server.

In private mode means a remote printer is not available for use on the network because it is being used as a local printer for a workstation.

You will see *Off line* and *Out of paper* when the accompanying status message is either *Printing job* or *Mark/Form feed.*

PAUse

Include this flag to stop the printer temporarily.

ABort

Include this flag to stop printing the current job. The job is deleted from the queue and the printer continues with the next job in the queue.

STOp [*Keep*]

Include this flag to stop the printer. To resubmit the current print job at the top of the queue, include Keep. Otherwise, the job will be deleted from the queue. Use the STARt flag to restart the printer.

STARt

Include this flag to restart a printer after you have stopped or paused it.

Mark [*character*]

Include this flag to see what line the form is on. The printer prints a line of whatever character you indicate so that you can see which line the printer will start printing on. If the printer is printing a job, it cannot mark the form.

Default character: *

FormFeed

Include this flag to advance the printer to the top of the next page. The printer must be paused or stopped to do a form feed.

MOunt Form=*n*

Include this flag to tell the print server that you have mounted a new form on the printer. Replace *n* with the form number. (You can define forms in PRINTDEF.)

PRIvate

Include this flag if you don't want other network users to print on the specified remote printer. This flag removes the remote printer from the list of network printers used by the print server and changes the remote printer to a local printer. You may need to adjust your applications accordingly.

SHared

Include this flag to remove the PRIvate flag so that other network users can print on the specified remote printer. Including this flag makes the remote printer available to the print server. You may need to adjust your applications accordingly.

CancelDown

Include this flag if you selected the "Going down after current jobs" option in PCONSOLE and want to cancel that command before the print server goes down. You don't need to specify a printer number (P=*n*) with this flag.

Additional information

You can use the DOS SET (Set Environment) command to set a default printer number and print server name for the PSC command. You can use the SET PSC command at the DOS prompt, or you can include it in your login script. You can also override the default settings (see "Change settings temporarily" on the next page).

To set defaults at the DOS prompt, type

SET PSC=PS*printserver* P*printernumber* <Enter>

To include defaults in your login script, type

SET PSC="PS*printserver* P*printernumber*"

Then, when you use the PSC command, you need to type only

PSC *flaglist* <Enter>

Replace *flaglist* with one of the flags listed on pages 142 through 144.

Set printer defaults in your login script

Suppose you always use print server MOZART and Printer0. Type the following in your login script:

```
SET PSC="PSmozart P0"
```

Suppose you then want to stop the printer. Type

```
PSC STO  <Enter>
```

Change settings temporarily

Suppose print server MOZART and Printer0 are the default parameters set up in your login script. However, you want to see the status of Printer1 on print server LIGHT. Type

```
PSC PS=light P=1 STAT  <Enter>
```

If you type another PSC command without printer number and print server settings, your default parameters (print server MOZART and Printer0) will be used.

If you want to control Printer1 on print server LIGHT for a number of hours, you can override your login script by typing

```
SET PSC=PSlight P1  <Enter>
```

These settings are valid until you log in again. When you log in again, the parameters in your login script (print server MOZART and Printer0) are used.

Control print servers and network printers

PSC provides a way to control print servers and network printers in DOS (rather than using PCONSOLE). The task you perform with PSC depends on which flag you include. An explanation of the flags begins on page 142.

View the status of a printer

Suppose you want to see why your job isn't printing. Your job is on printer 2 (named Pub) on print server CORP. Type

```
PSC PS=corp P=2 STAT  <Enter>
```

Information similar to the following appears:

```
Printer 2: Pub
Printing job
Out of paper
```

View status of all printers

Suppose you want to view the status of all printers installed on print server ACCTG. Type

```
PSC PS=acctg STAT  <Enter>
```

Suppose you have used the DOS SET command to define print server ACCTG and printer number 3 as your default parameters. To view the status of all printers installed on print server ACCTG, type

```
PSC P=all STAT  <Enter>
```

Abort a print job

Suppose you want to stop printing the current print job and resubmit it at the bottom of the queue. (Perhaps the next job in the queue is more urgent than the current 100-page job.) You are using printer 3 on print server PUBLIC. Type

```
PSC PS=public P=3 AB K  <Enter>
```

Mount a new form

Suppose you have just changed the form in Printer6 on print server LEGAL. To tell the print server that you have changed to form 1, type

```
PSC PS=legal P=6 MO F=1  <Enter>
```

Make a remote printer private

Suppose you don't want other network users to print on the printer attached to your workstation. Your printer is Printer5 on print server SERVICE. Type

```
PSC PS=service P=5 PRI  <Enter>
```

The PRIvate flag removes the remote printer from the list of network printers used by the print server and changes the remote printer to a local printer. You may need to adjust your applications accordingly.

Cancel a DOWN command

Suppose you selected the "Going down after current jobs" option in PCONSOLE for print server MKTG. You decide to cancel that command before the print server goes down. Rather than going back into PCONSOLE, you can use PSC with the CancelDown flag. You don't need to specify a printer number. Type

```
PSC PS=mktg CD  <Enter>
```

Notes

PSERVER.EXE

Dedicated workstation Print SERVER

Why use PSERVER.EXE?

Use PSERVER to load a print server on a dedicated workstation.

Command format

PSERVER [*fileserver*] *printserver*

Additional information

Before you run the print server, you must set up a print server account using PCONSOLE. See "Print Server Installation" on page 15.

To run a print server, you must have access to the following files:

IBM$RUN.OVL
PSERVER.EXE
SYS$ERR.DAT
SYS$HELP.DAT
SYS$MSG.DAT

You must also increase the SPX connections in the SHELL.CFG file on the dedicated workstation. Include the following line:

SPX connections = 60

The print server can support up to 16 printers and can service queues on up to eight file servers.

Use PCONSOLE to down a print server on a dedicated workstation. See "Down a print server" on page 98 for more information.

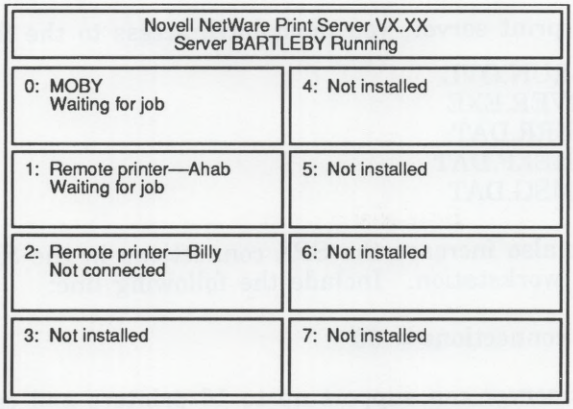
Run the print server on a dedicated workstation

Suppose you have created the print server BARTLEBY and have defined three printers to be serviced. Printer0, MOBY, is attached to the print server. Printer1 is a remote printer attached to Ahab's workstation, and Printer2 is a remote printer attached to Billy's workstation.

Access the print server files by logging in to the file server or by inserting a diskette with the print server files into drive A. Type

```
PSERVER bartleby
```

A screen similar to the following appears, listing the status of printer slots 0 through 7. Press the spacebar to toggle between the status screens for printers 0 through 7 and printers 8 through 15.



Dedicated workstation print server screen

LOAD Loadable Module

PSERVER.NLM

Print Server

Why use PSERVER.NLM?

Use LOAD PSERVER to load the print server on a NetWare v3.11 file server and to establish print services for the network.

Command format

LOAD PSERVER *printserver*

Additional information

Before you load the print server, you must set up a print server account and configuration files using PCONSOLE. For more information, see "Print Server Installation" on page 15.

The print server can support up to 16 printers and can service queues on up to 8 file servers.

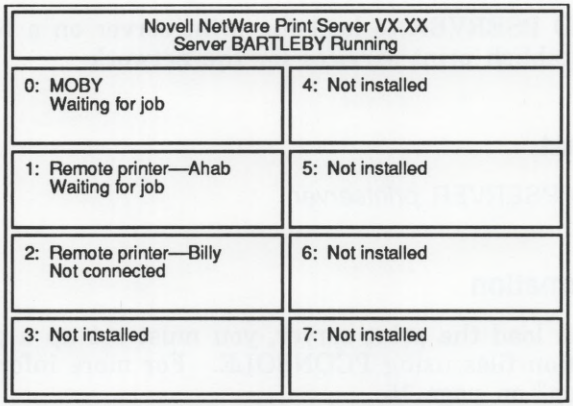
Load the print server on a file server

Suppose you have created the print server BARTLEBY and have defined three printers to be serviced. Printer0, MOBY, is attached to the file server. Printer1 is a remote printer attached to Ahab's workstation, and Printer2 is a remote printer attached to Billy's workstation.

To load print server BARTLEBY, type

```
LOAD PSERVER bartleby
```

A screen similar to the following appears, listing the status of each available printer slot. Use the spacebar to switch between screens. Use <Alt><Escape> to exit the print server screen.



Not installed. No configuration files have been set up for these printer slots.

Not connected. Remote printers are defined in the configuration files but are not yet connected. Run RPRINTER to connect the remote printer. The defined remote printer slots can be used by any remote printer.

Waiting for job. The printers attached to the workstation are ready to print.

Out of paper. The printer is out of paper. This message also occurs if the printer is not physically attached to the print server or the workstation. It means there is some problem with the printer.

Unload the print server

The loadable module makes reconfiguring your print server very easy. You can use PCONSOLE to reconfigure your print environment. If you define new printers, you must unload your print server.

To unload the print server, type

UNLOAD PSERVER *printserver*

Unloading the print server is the same as downing the print server in PCONSOLE. If you down the print server in PCONSOLE, it is automatically unloaded at the file server.

Reload your print server module so the new printer configurations take effect.

Notes

PSERVER.VAP

Print SERVER VAP

Why use PSERVER.VAP?

Use PSERVER to stop or start the print server VAP without downing or booting the file server or the bridge. Use the PSERVER.VAP on NetWare 286 v2.15c or above networks.

Command format

PSERVER STOP
PSERVER START

Additional information

This command works only if you load the VAP each time you boot the file server or the bridge.

Before you load the VAP, you must set up a print server account and configuration files in PCONSOLE. See "Print Server Installation" on page 19 for more information.

The print server can support up to 16 printers and can service queues on up to 8 file servers.

Stop the print server

If you define new printers in PCONSOLE, you must stop and then restart the print server.

To stop the print server, type

PSERVER STOP

Stopping the print server at the file server or the bridge has the same effect as downing the print server in PCONSOLE.

Restart the print server so the new printer configurations take effect.

Start the print server on a file server

Suppose you want to start print server JORDAN. To do so, type

```
PSERVER START <Enter>
```

PSERVER START will reload whatever print server was originally loaded when the server was first brought up.

RPRINTER

Remote Printer

Why use RPRINTER?

Use RPRINTER to connect or disconnect a remote printer on a network.

Command format

RPRINTER [*printserver printernumber*] [-r] [-s]

The -r option disconnects the remote printer from the print server.

The -s option displays the status of the specified remote printer.

If you are using an extended or expanded memory shell, don't remove RPRINTER with the -r option. Reboot the machine to remove RPRINTER.

You can run RPRINTER as a command line or menu program. If you type RPRINTER without any options, you can select the print server and the printer number from a menu. For information on using the menu, see page 158.

Additional information

A remote printer can be attached to any workstation that is attached to the same network or internetwork as the print server.

The remote printer file is a terminate-and-stay-resident (TSR) program. It is loaded into the workstation's memory and runs in the background until it is removed or until the workstation is rebooted. The TSR remains active when you down the file server.

You must load RPRINTER for each printer attached to the workstation.

You do not need to be logged in to the file server to run RPRINTER; however, you must have the NetWare shell loaded.

Note: You can insert RPRINTER into the AUTOEXEC.BAT file of the workstation being used as a remote printer. Then RPRINTER will load automatically each time you boot the workstation.

Before you can connect a remote printer, you must use PCONSOLE to

- Define the remote printer
- Assign a queue to be serviced by the remote printer

You must also add the following line to the CONFIG.SYS file:

```
SPX=50
```

As part of defining the printer in PCONSOLE, you must specify if the remote printer is connected to a parallel or serial port. If you want to specify the port type in RPRINTER rather than in PCONSOLE, use the "Remote Unknown" designation.

For more information on defining printers and mapping queues, see "Print Server Installation" on page 15.

To run the remote printer software, you must have access to the following files:

```
IBM$RUN.OVL
RPRINTER.EXE
RPRINTER.HLP
RPRINT$$.EXE
SYS$HELP.DAT
SYS$MSG.DAT
SYS$ERR.DAT
```

These files are copied into the SYS:PUBLIC directory during installation. For more information see "Print Server Installation" on page 15.

Connect a remote printer to a print server (menu)

RPRINTER includes a short menu program from which to select a print server and a remote print number. Complete the following steps.

1. Enter RPRINTER. Select the print server you want to use.
2. Select a printer number based on the printer name.

   If you selected "Remote/Other Unknown" when you defined your printer type in PCONSOLE, you must enter the specific printer information now.

3. First specify whether your printer is parallel or serial by pressing <Enter> in the "Printer Definition" screen. Select which parallel or serial port you want to attach your printer to.

   If you chose a parallel printer, press <Escape> to connect your remote printer.

   If you chose a serial printer, check the default printer settings. If you need to make any changes, select the setting for a list of possible options. Select the new setting. Press <Escape> to connect your remote printer.

Connect a remote printer to a print server (command line)

Suppose you have a parallel printer attached to LPT1 on Jack's workstation and want to use it as a network printer connected to print server MICKEY.

When you set up the configuration files for print server MICKEY, you define Printer2 as a remote printer.

To connect the printer at Jack's workstation to print server MICKEY, type

```
RPRINTER mickey 2
```

The following message appears:

```
** Remote printer now installed **
```

The remote printer software has been loaded, and the printer functions like any other network printer.

Disconnect a remote printer from a print server

Suppose you want to disconnect Printer2 from print server MINNIE. Type

```
RPRINTER minnie 2 -r
```

The following message appears:

```
** Remote printer now deinstalled **
```

The remote printing software is removed from memory.

Use a network printer as a local printer

If you have a remote printer connected to your workstation, you can prevent other users from using it as a network printer. Use the private flag with PSC to reserve your printer for your use only.

To assign private status to remote Printer3 attached to print server MICKEY, type

```
PSC ps=mickey p=3 private
```

To remove the private status and return the printer for network use, type

```
PSC ps=mickey p=3 shared
```

SPOOL

Why use SPOOL?

Use SPOOL to create, change, or display the spooler assignments. Use this command at the file server.

These assignments set up default print queues for NPRINT and CAPTURE and support applications that make calls to printer numbers rather than to queues.

Command format

SPOOL

List spooler assignments.

SPOOL *n* [TO] [QUEUE] *name*

Create or change the spooler assignment.

Replace *n* with the spool number (0 through 4).

Replace *name* with the queue name.

Additional information

Spooler assignments only direct jobs to queues. What happens to the job after it is in the queue depends on how you have set up your printer mappings.

Note: To save the spooler assignmenyts permanently, include them in the system AUTOEXEC file. Each time the file server is booted, the spooler assignments will be set up. You can complete this task in SYSCON under "Supervisor Options."

Create a default queue for NPRINT and CAPTURE

All print requests are submitted to queues. If you do not specify a queue when making a print request with CAPTURE or NPRINT, the SPOOL 0 mapping (or the default print job you create in PRINTCON) sends the print job to a queue for you.

Suppose you create an ACCOUNTS print queue. You want it to be the default queue if you do not specify a queue when using NPRINT and CAPTURE. To create the corresponding spooler, type

```
SPOOL 0 TO ACCOUNTS <Enter>
```

Suppose you did not specify a queue using NPRINT:

```
NPRINT REPORT
```

The spooler would direct the REPORT file to the ACCOUNTS queue. The print server would take the request out of the queue and send it to whichever printer was mapped to the ACCOUNTS queue.

If you have created a default print job in PRINTCON, the default queue specified in the print job takes precedence over the SPOOL 0 mapping.

Create spooler assignments

You also need spooler assignments to support applications that send requests to printer numbers.

If an application tries to send a job to a printer, the spooler intercepts that job and puts it into a queue. The job is then serviced by whichever printer is mapped to that queue.

The printer numbers used by applications are logical printer numbers (0 through 4 are used by earlier versions of NetWare) and do not correspond to the 16 printer numbers used by the print server.

Suppose you use an application that sends print jobs to Printer1. You want these jobs printed on a LaserJet printer you have defined as Printer3 on your print server. You have assigned Printer3 to service the LASER queue you have set up. To set up the appropriate spooler, type

```
SPOOL 1 TO LASER <Enter>
```

Change spooler assignments

Suppose Spooler 2 has been redirecting print requests to the ACCOUNTS queue and you want to spool those calls to the PROFITS queue. Type

SPOOL 2 TO PROFITS <Enter>

After you change the spooler assignment for Spooler 2, all print jobs directed to Spooler 2 are sent to the PROFITS queue and are printed by the printer servicing the PROFITS queue.

List spooler assignments

Use SPOOL to display the current spooler assignments for the file server.

To list the current spooler assignments, type

SPOOL <Enter>

You see information similar to the following on the file server console:

```
Spooler 0 is directed into queue ACCOUNTS
Spooler 1 is directed into queue PAYROLL
Spooler 2 is directed into queue MARKETING
```

Notes

Troubleshooting

This section describes some of the more common problems you may encounter with printing on your network. It is not intended to be exhaustive. If you need more help, contact your Novell Service Representative.

General suggestions

Many printing problems can be traced back to incorrect or incomplete print server installations. It's always wise to check the installation configurations first.

Some of the common causes of printing problems are incomplete installations, conflicting interrupts (IRQ settings), and faulty hardware.

Print queues occasionally become corrupted. If all other troubleshooting solutions fail, delete the print queues and print servers, and redo them.

Print jobs go to the queue, but don't get sent to the printer

Possible causes

- The print server/print queue configuration is incorrect.
- The hardware (card, cable, port) is not working properly.
- The interrupts are configured incorrectly.
- The printer is cabled incorrectly.
- A printer definition is needed for that particular printer.
- The SHELL.CFG file on a workstation using RPRINTER has LOCAL PRINTERS=0.
- The printer is be offline, jammed, or out of paper.
- A remote printer is set to "Private."

Possible solutions

1. Check all the print server/print queue installation information in PCONSOLE.
2. Recheck all your hardware connections. Some LPT ports that are part of a monitor board seem to have problems, so you might try LPT2 or a system board port.
3. If the printer is serial and is configured to use interrupts, it may be configured for IRQ 7. If so, the interrupt must be changed for COM ports. Use IRQ 4 for COM 1 and IRQ 3 for COM 2.
4. Recheck the printer cabling. The message in the print server screen should say "Waiting for job."
5. Check to see if a printer definition file exists for your printer.
6. If you're using a remote printer, check the SHELL.CFG file on the workstation attached to the printer. If the SHELL.CFG file includes the line LOCAL PRINTERS=0, you should either remove the line or change it to include the appropriate numeric value.
7. Check the printer for messages.
8. Check the settings on the remote printer.

Print jobs go to the printer, but print very slowly or print unknown characters

Possible causes

- The printer configuration needs to be changed.
- The hardware (card, cable, port) is not working properly. For instance, some printer ports do not generate interrupts.
- If the printer is a remote printer, the workstation it is attached to may not run the RPRINTER program effectively.

Possible solutions

1. If the printer is local and is configured to use interrupts, switch to not using interrupts. Switching frequently resolves this problem, even when no hardware conflict is apparent.

2. Recheck all your hardware connections. Some LPT ports that are part of a monitor board have problems. Try LPT2 or a system board port.

3. If you're using a remote printer attached to a workstation using RPRINTER, try another machine for the workstation. Some workstations work more effectively than others with RPRINTER.

Message on print server screen indicates that printer is out of paper or offline when it is neither

Possible causes

- The hardware is not working properly.

Possible solutions

1. Check all your cable, card, and port connections. You probably have some faulty hardware and will need to isolate its location.

You are prompted for a print server password when you haven't assigned one

Possible causes

- PSERVER.NLM or PSERVER.EXE was loaded without specifying the print server name.
- When PSERVER.NLM or PSERVER.EXE was loaded, the print server name was typed incorrectly.
- The print server or the print queues are corrupted.
- A file server has been added to the "File Servers to be serviced" list in the Print Server Configuration, but the print server has not been defined on the new file server.

Possible solutions

1. Reboot and specify the print server name when loading PSERVER.
2. Reboot and type the print server name correctly when loading PSERVER.
3. Check all the print queue/print server information in PCONSOLE. If it appears to be complete and correct, the server or queue configuration may be corrupted. In this case, delete the print server and queue, and redo them.
4. Define the print server on the new file server.

Memory Requirements

Print server NLM on a NetWare 3.11 file server

The print server NLM requires 128KB of memory. Add 10KB for each printer you are using. These figures vary depending on buffer size, queues per printer, and notify objects per printer.

Print server VAP on a file server or a bridge

The print server VAP requires 256KB of memory, including DOS when loaded on a bridge. Add 10KB for each printer you are using. These figures vary depending on buffer size, queues per printer, and notify objects per printer.

Dedicated workstation print server

The dedicated workstation print server requires 256KB of memory, including the NetWare shell and DOS. Add 10KB for each printer you are using. These figures vary depending on buffer size, queues per printer, and notify objects per printer.

Remote printer

The remote printer requires 9KB of memory. This figure includes all the buffer space needed to run the printer.

The remote print TSR stays active when you down the file server.

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Printing Worksheet for Print Server _____

❑ Workstation running as a Dedicated Print Server

Printer	Name	Location	Port	Control Mode	Queues Serviced (up to 8 file servers)
0				❑Polled ❑Interrupt (IRQ) _____	
1				❑Polled ❑Interrupt (IRQ) _____	
2				❑Polled ❑Interrupt (IRQ) _____	
3				❑Polled ❑Interrupt (IRQ) _____	
4				❑Polled ❑Interrupt (IRQ) _____	
5				❑Polled ❑Interrupt (IRQ) _____	
6				❑Polled ❑Interrupt (IRQ) _____	
7				❑Polled ❑Interrupt (IRQ) _____	
8				❑Polled ❑Interrupt (IRQ) _____	
9				❑Polled ❑Interrupt (IRQ) _____	
10				❑Polled ❑Interrupt (IRQ) _____	
11				❑Polled ❑Interrupt (IRQ) _____	
12				❑Polled ❑Interrupt (IRQ) _____	
13				❑Polled ❑Interrupt (IRQ) _____	
14				❑Polled ❑Interrupt (IRQ) _____	
15				❑Polled ❑Interrupt (IRQ) _____	

VAP running on File Server ❑ or Bridge ❑

Printer	Name	Location	Port	Control Mode	Queue Name
0				❑Polled ❑Interrupt (IRQ) _____	
1				❑Polled ❑Interrupt (IRQ) _____	
2				❑Polled ❑Interrupt (IRQ) _____	
3				❑Polled ❑Interrupt (IRQ) _____	
4				❑Polled ❑Interrupt (IRQ) _____	
5				❑Polled ❑Interrupt (IRQ) _____	
6				❑Polled ❑Interrupt (IRQ) _____	
7				❑Polled ❑Interrupt (IRQ) _____	
8				❑Polled ❑Interrupt (IRQ) _____	
9				❑Polled ❑Interrupt (IRQ) _____	
10				❑Polled ❑Interrupt (IRQ) _____	
11				❑Polled ❑Interrupt (IRQ) _____	
12				❑Polled ❑Interrupt (IRQ) _____	
13				❑Polled ❑Interrupt (IRQ) _____	
14				❑Polled ❑Interrupt (IRQ) _____	
15				❑Polled ❑Interrupt (IRQ) _____	

Data parameters for serial printers:

Printer	Baud Rate	Word Length	Stop Bits	Parity	Xon/Xoff

Printer	Baud Rate	Word Length	Stop Bits	Parity	Xon/Xoff

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